LANDATU
SOLAR

USE AND INSTALLATION MANUAL

LANDBLOCK® 15°

SUPPORTS WITH WATER BALLAST

FOR SOLAR SYSTEMS ON ROOFTOPS
OR PASSABLE FLAT SURFACES

PRODUCT PATENTED LANDATU SOLAR

DEKRA zertifiziert

TÜV SÜD Strength Test

landatusolar.com

V260903

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Fast installation

Without perforating the rooftop

Without heavy machinery

⚠ This use and installation manual must be followed for LANDBLOCK® installation.

LANDBLOCK® 15º

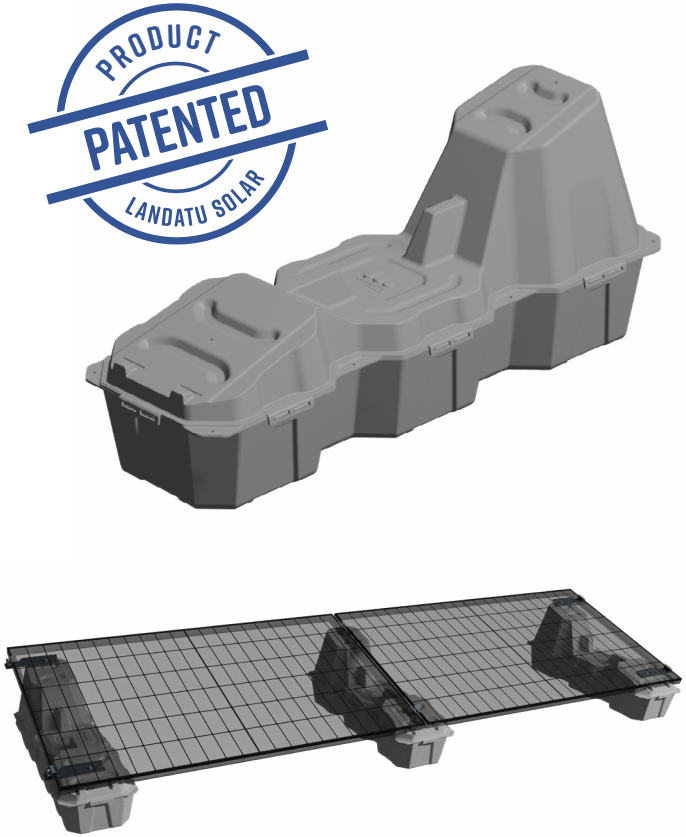
SUPPORTS WITH WATER BALLAST THE BEST SOLUTION FOR SOLAR SYSTEMS!

LANDBLOCK® 15º is a support with water ballast that is perfect for installing solar systems on any flat surface (rooftop, ground, etc.).

Simplify solar panel installation with LANDBLOCK® 15º and forget concrete supports.

Technical Information

Composition	HDPE
Support tilt angle	15º
Weight (without ballast)	3 kg
Dimensions	380 × 1150 × 480 mm
Units/pallet	100 units
Ballast capacity	56 L (water), more than 100 kg (gravel, sand, concrete...)



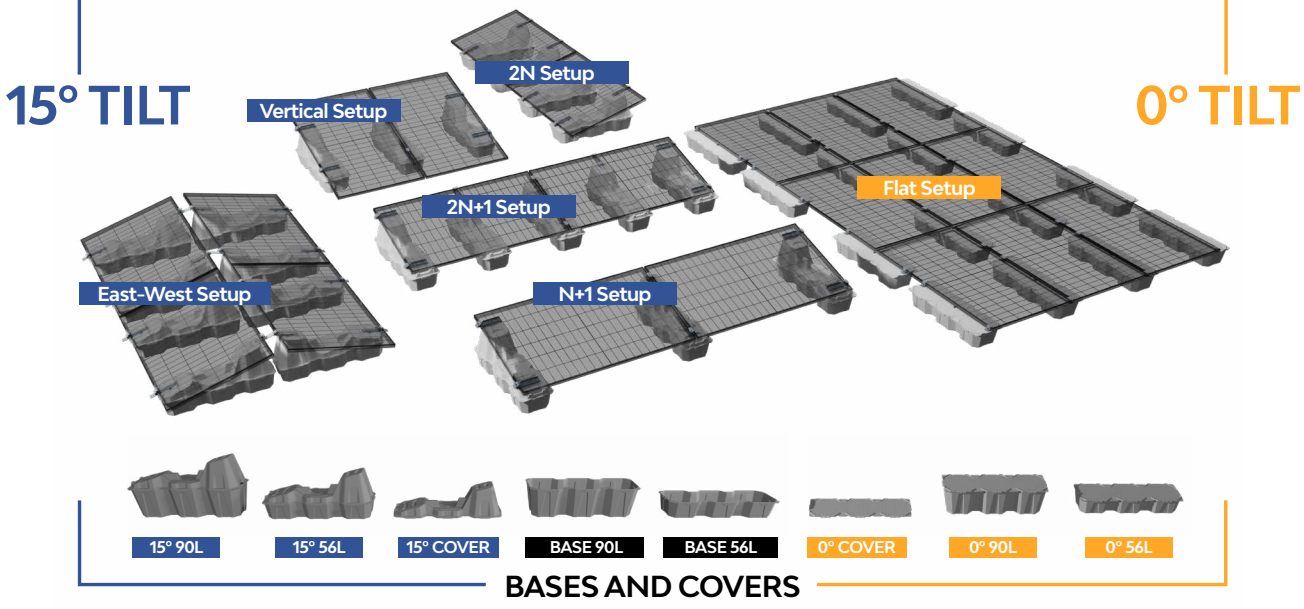
Advantages

- ✔ Minimise costs and shorten installation time.
- ✔ Simplify everything:
  - ✖ No perforations
  - ✖ No foundation
  - ✖ No metal structures
  - ✖ No concrete
  - ✖ No heavy machinery
- ✔ Lightweight and stackable Get rid of heavy supports and lower transport and storage costs.
- ✔ LANDBLOCK® 15º lets you adjust the ballast weight depending on the rooftop.
- ✔ Evaporation tests have been done that show the water doesn't evaporate.

INTENDED USE

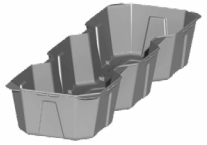
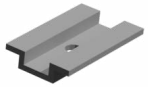
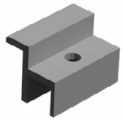
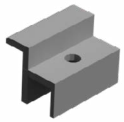
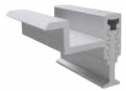
- LANDBLOCK® 15° is designed exclusively for use on rooftops or flat surfaces (max. 5°).
- Different ballast materials, like water or gravel, can be used with the support depending on the project requirements.
- The solar panels are installed directly on the support using the connectors without having to assemble a metal or concrete structure.
- The complete support has a mass of 3 kg, so you DON'T need to use a forklift or other lifting device.
- The lugs on the LANDBLOCK® 15° can be used to channel the electrical wiring in a safe organised way.
- With the horizontal panel, all configurations (N+1, 2N+1 and 2N) are possible. However, installations with the panel in vertical position only allow the N+1 configuration.
- With LANDBLOCK® 15°, east-west installations are possible. Scan the QR and you will be able to access the manual for this type of configuration.

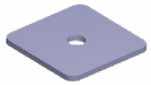
Our scalable solutions



SCAN TO SEE
OUR TUTORIALS

LANDBLOCK® 15° MATERIALS

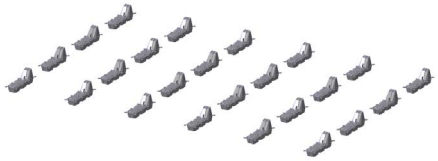
Included	Part	Reference
15° LANDBLOCK® cover		7004-001
LANDBLOCK® Base		6001-001-OP01 (56L) 6002-001-OP01 (90L)
XL union plate		8029-001-OP01
Middle clamp		9009-001-OP01
End clamp 35 mm panel		9008-001-OP01
End clamp 30 mm panel		9010-001-OP01
End clamp adjustable in height		9011-001-OP01

Included	Part	Reference
Square washer		8004-001-OP01
Stainless steel allen		9026-001-OP01
Grower washer M8 stainless steel.		9024-001-OP01
M8 stainless steel hex nut.		9028-001-OP01
Self-tapping screw pan head 4.2 × 22 mm A2 stainless steel		9030-001-OP01
Round plug ø22 mm		9001-001-OP01

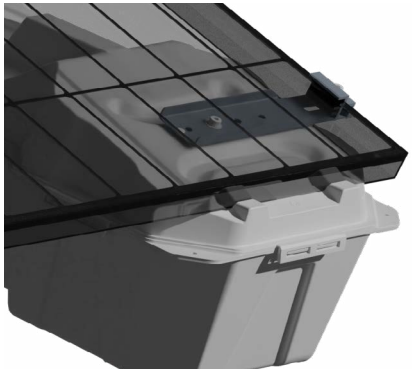
INSTALLATION IN JUST 4 STEPS

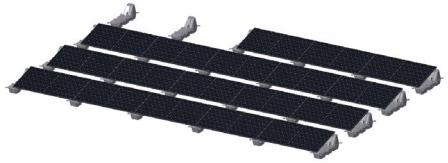
1 — 2 — 3 — 4

POSITION THE SUPPORTS

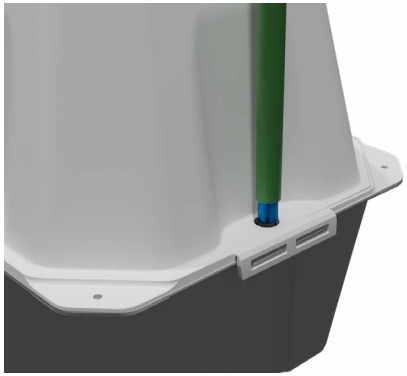


ATTACH THE PANELS TO THE LANDBLOCK® 15º

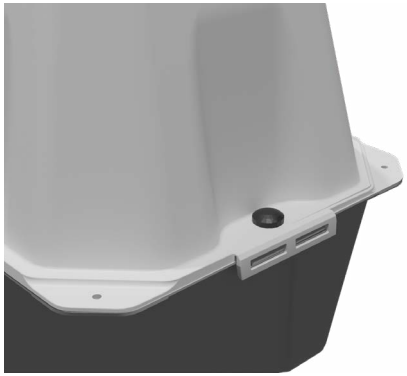




USE WATER FOR BALLAST



PUT THE PLUG ON



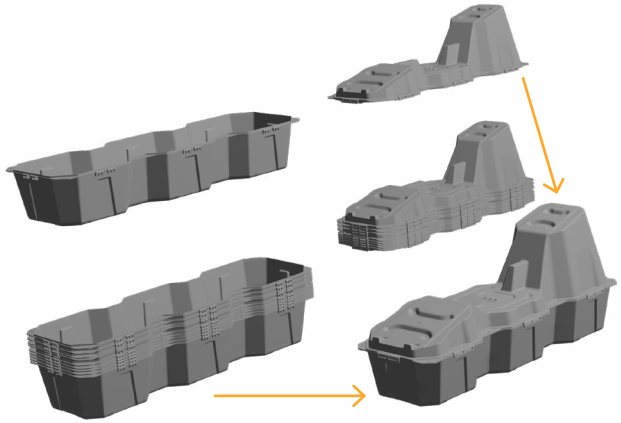
1 LANDBLOCK® 15º positioning

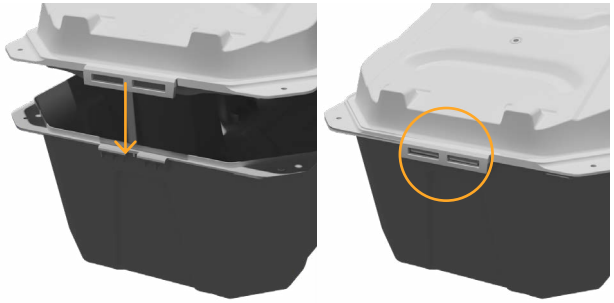
Step 1 A

To assemble the LANDBLOCK® 15º put a cover on each base and push the 'click' closure (without tools).

The cover and base must be fitted correctly to ensure a secure seal and prevent water from evaporating.

Recomendation: To further ensure a secure seal, we recommend fitting a clamp to each of the 8 holes in the bracket.





Step 1 B

Lay out the LANDBLOCK® 15º in the required configuration depending on the size of the module you're using. You should pay attention to the distance between the panels (e.g. 2 cm).

Recommendation: Put the first and last LANDBLOCK® 15º on every row in the area and run a line from the first lug to the last one to use as a guide for levelling and lining up the rest of the LANDBLOCK® 15º.

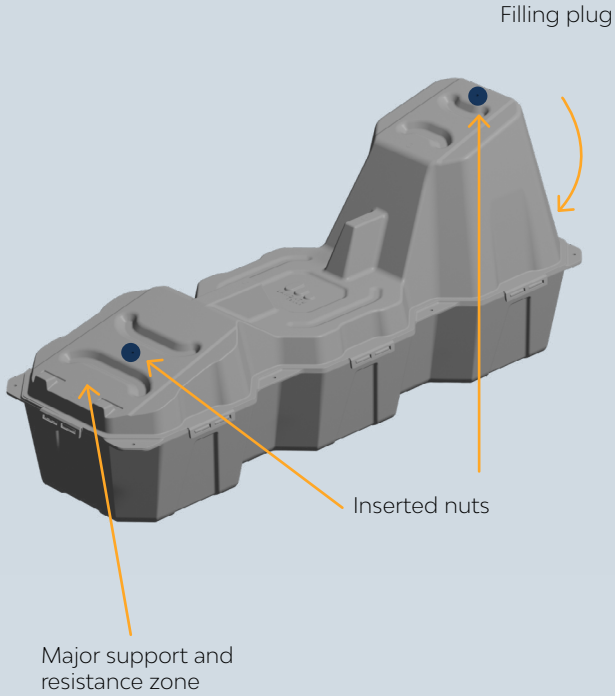
Attention!

If the roof has gravel, it is advisable to remove it slightly at the point where the Landblocks will be placed. This will prevent cracks in the base.

NEW

The LANDBLOCK® 15º anchoring areas have been reinforced for better panel fixation, and nuts have been inserted into the mold.

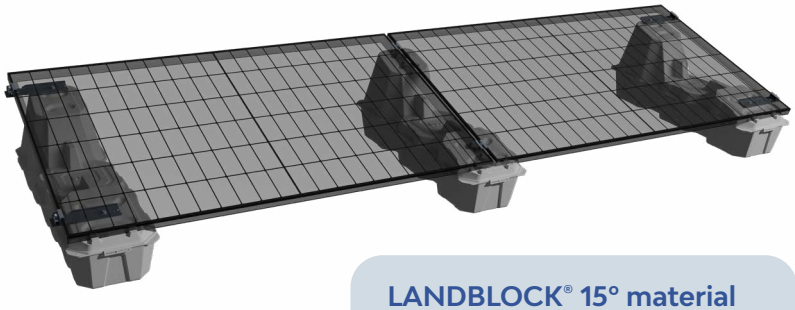
- ✔ Greater support area and strength.
- ✔ Height and length adjustment.



2 Installing connectors and panels

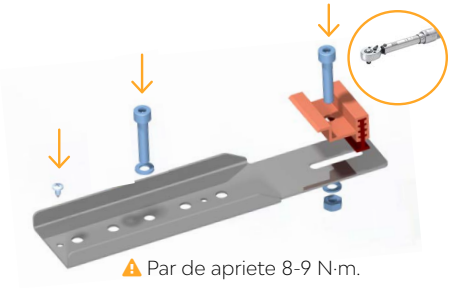
2.1 Horizontal N+1 installation

Valid configuration for all kinds of panels wider than 990 mm



Step 2.1A

Place the plates for the L**ANDBLOCK® end-of-row supports** in a horizontal position (as shown in the images), securing the plate with the M8 screw in **hole 4** together with the lag screw and the end clamps.

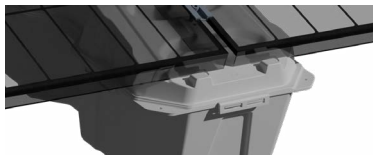


⚠ Par de apriete 8-9 N·m.

Step 2.1B

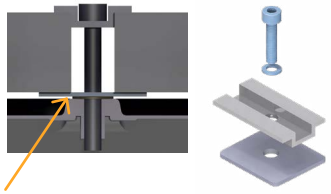
Support the solar panel horizontally on the LANDBLOCK® 15° supports.

Recommendation: First support the panel on the lower plane of the support.



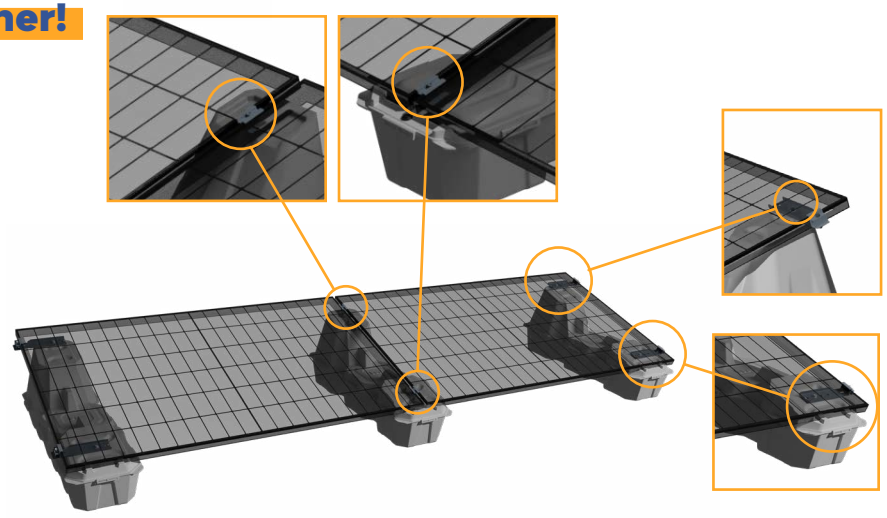
Step 2.1C

Place the intermediate staples together with the square washer. **The square washer will be placed underneath the panel.** This will ensure that the panel is secured between the staples and the square washers.



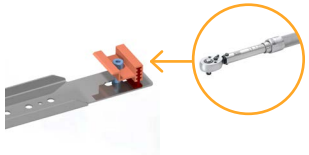
⚠ Tightening torque 8-9 N·m.

Washer!



Step 2.1D

Adjust the end clamps and the middle clamps and tighten with a torque wrench.



⚠ Tightening torque 8-9 N·m.

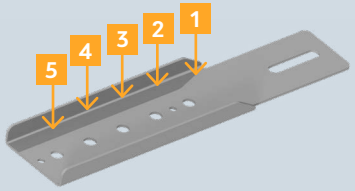
LANDBLOCK® 15° material

- ✔ LANDBLOCK® 15° base
- ✔ LANDBLOCK® 15° cover
- ✔ Plug 1 × LANDBLOCK® 15°
- ✔ Plate 4 × number of rows

End clamps:
4 × number of rows

Middle clamps:
(2 × no. panels) - (2 × no. rows)

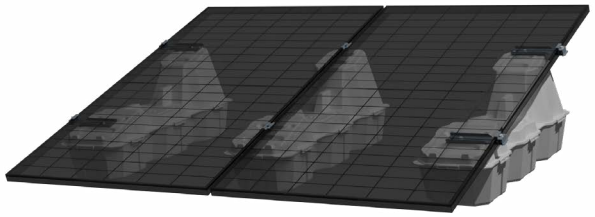
The plate is adjustable and has holes for different positions, depending on the panel size.



Attention!

If you notice that the screw is seizing up during tightening, apply an anti-seize compound or reduce the drill speed to prevent damage to the threads and make assembly easier.

2 Installing connectors and panels

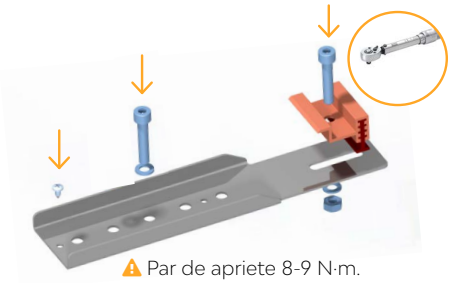


2.2 Vertical N+1 installation

Valid configuration for all kinds of panels wider than 990 mm

Step 2.2A

Place the plates for the L**ANDBLOCK® end-of-row supports** in a horizontal position (as shown in the images), securing the plate with the M8 screw in **hole 4** together with the lag screw and the end clamps.



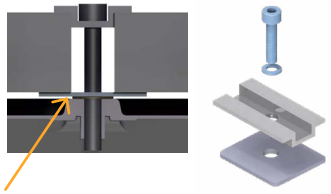
⚠ Par de apriete 8-9 N·m.

Step 2.2B

Support the solar panel vertically on the LANDBLOCK® 15° supports.

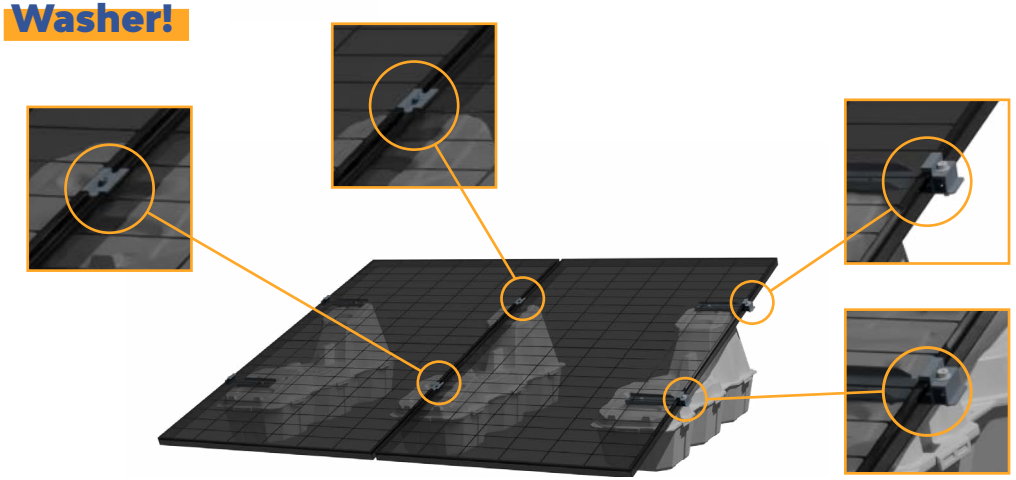
Step 2.2C

Place the intermediate staples together with the square washer. **The square washer will be placed underneath the panel.** This will ensure that the panel is secured between the staples and the square washers.



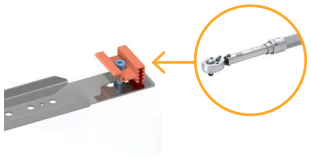
⚠ Tightening torque 8-9 N·m.

Washer!



Step 2.2D

Adjust the end clamps and the middle clamps and tighten with a torque wrench.



⚠ Tightening torque 8-9 N·m.

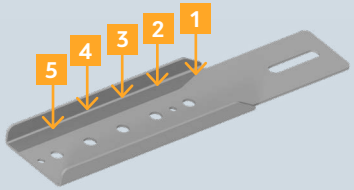
LANDBLOCK® 15° material

- ✔ LANDBLOCK® 15° base
- ✔ LANDBLOCK® 15° cover
- ✔ Plug 1 × LANDBLOCK® 15°
- ✔ Plate 4 × number of rows

End clamps:
4 × number of rows

Middle clamps:
(2 × no. panels) - (2 × no. rows)

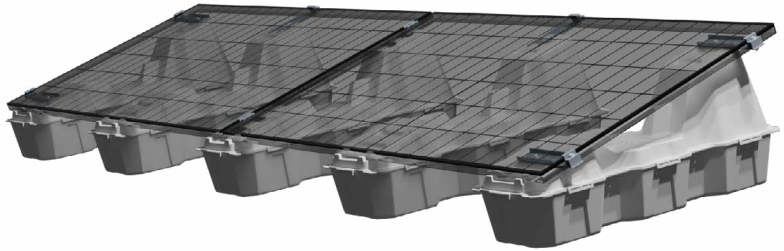
The plate is adjustable and has holes for different positions, depending on the panel size.



Attention!

If you notice that the screw is seizing up during tightening, apply an anti-seize compound or reduce the drill speed to prevent damage to the threads and make assembly easier.

2 Installing connectors and panels

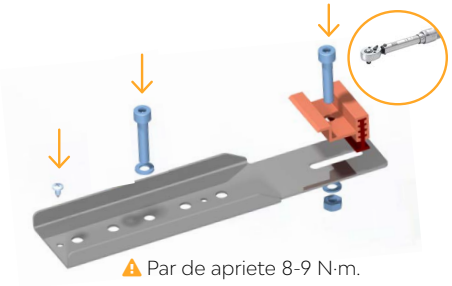


2.3 2N+1 installation

Configuration valid for all types of panels with a width of 1070 to 1304 mm

Step 2.3A

Place the plates for the L**ANDBLOCK® end-of-row supports** in a horizontal position (as shown in the images), securing the plate with the M8 screw in **hole 4** together with the lag screw and the end clamps.

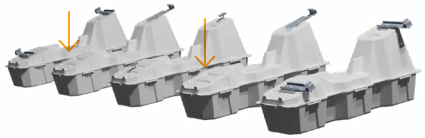


⚠ Par de apriete 8-9 N·m.

Step 2.3B

Position the **LANDBLOCK® intermediate** plates vertically according to the panel dimensions **(see placement table)**. Use the small holes to secure with lag screws.

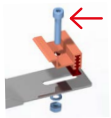
Place M8 screws in the lower part of the intermediate LANDBLOCK® (on 1134 mm panels to prevent water evaporation through the holes).



Step 2.4B

Place the end clamps loosely on the LANDBLOCK® 15° plate.

⚠ Tightening torque 8-9 N·m.



Step 2.3D

Support the solar panel horizontally on the LANDBLOCK® 15° supports.

Recommendation: First support the panel on the lower plane of the support.

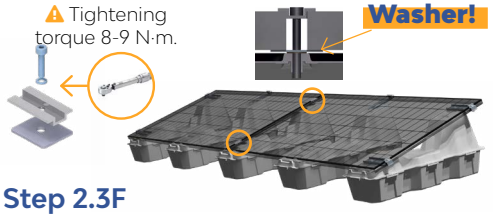
Placing plates in intermediate LANDBLOCK®

Panels measuring 1070 to 1200 mm: a plate on the top **(the mounting hole depends on the panel)** with the lag bolt anchored behind, as the lower panel rests on the battlements, and an M8 screw is installed. ***Reference:*** *For **1134 mm (image on the right)**, the plate is placed in **hole 3**. The plate will be adjusted depending on the panel size, using a hole at the top or bottom.*	
Panels measuring 1200 to 1304 mm: two vertical plates, the lower plate always in **hole 5** (the lag screw is directly behind the plate, the last hole in the plate), and the upper plate, depending on the panel. ***Reference:*** *For **1134 mm (image on the right)**, the lower plate is placed in **hole 5**. The plate is adjusted depending on the panel size, using a higher or lower hole.*	

Step 2.3E

Place the intermediate staples together with the square washer. **The square washer will be placed underneath the panel.** This will ensure that the panel is secured between the staples and the square washers.

⚠ Tightening torque 8-9 N·m.



Step 2.3F

Adjust the end clamps and the middle clamps and tighten with a torque wrench.

⚠ Tightening torque 8-9 N·m.

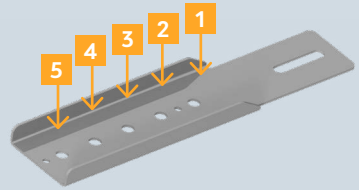
LANDBLOCK® 15° material

- ✔ LANDBLOCK® 15° base
- ✔ LANDBLOCK® 15° cover
- ✔ Plate 1 × n° panels
- ✔ Plate 4 × number of rows
- ✔ Filling plug

End clamps:
(4 × number of rows)
+ (2 × number of panels)

Middle clamps:
(2 × no. panels) - (2 × no. rows)

The plate is adjustable and has holes for different positions, depending on the panel size.



Attention!

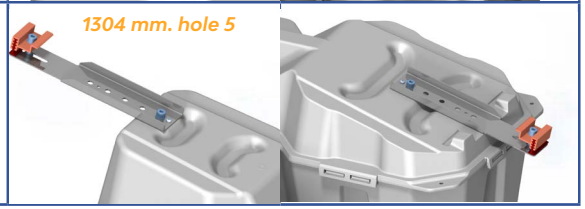
If you notice that the screw is seizing up during tightening, apply an anti-seize compound or reduce the drill speed to prevent damage to the threads and make assembly easier.

2.4 2N installation

Suitable for all types of panels with a width of 1070 to 1304 mm.

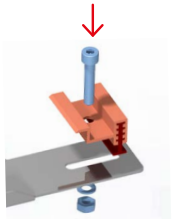
Step 2.4A

Screw the plates vertically with an M8 screw using a torque wrench, positioning the screw according to the panel dimensions. Use the small holes to secure with lag screws according to the guide.

Panels de 1070 a 1200 mm. : two vertical plates, the lower plate in **hole 4** (the lag screw is directly behind the plate, the last hole in the plate), and the upper plate, depending on the panel. ***Reference:** For **1134 mm (image on the right)**, the plate is placed in **hole 1**. The plate will be adjusted depending on the panel size, using a hole at the top or bottom.*	
Panels measuring 1200 to 1304 mm: two vertical plates, the lower plate in **hole 5** (the lag screw is directly behind the plate, the last hole in the plate), and the upper plate, depending on the panel. ***Reference:** For **1304 mm (image on the right)**, the lower plate is placed in **hole 5**. The plate is adjusted depending on the panel size, using a higher or lower hole.*	

Step 2.4B

Place the end clamps loosely on the LANDBLOCK® 15º plate.

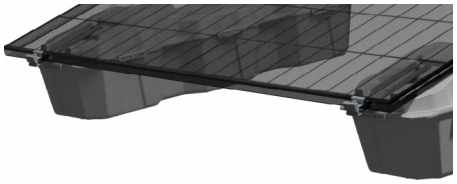


⚠ Tightening torque 8-9 N·m.

Step 2.4C

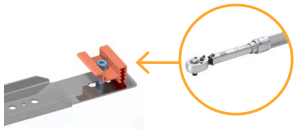
Support the solar panel horizontally on the LANDBLOCK® 15º supports.

Recommendation: First support the panel on the lower plane of the support.



Step 2.4D

Adjust the end clamps and the middle clamps and tighten with a torque wrench.



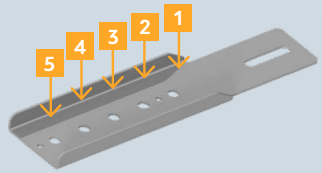
⚠ Tightening torque 8-9 N·m.

LANDBLOCK® 15º material

- ✔ LANDBLOCK® 15º Base
- ✔ LANDBLOCK® 15º Cover
- ✔ Plate 1 × nº panels
- ✔ Filling plug

End clamps:
4 × number of panels

The plate is adjustable and has holes for different positions, depending on the panel size.



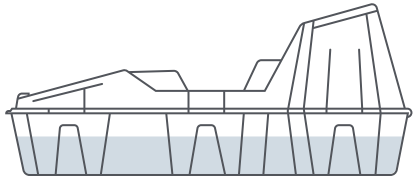
Attention!

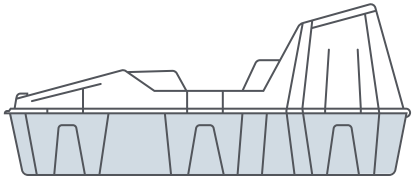
If you notice that the screw is seizing up during tightening, apply an anti-seize compound or reduce the drill speed to prevent damage to the threads and make assembly easier.

3 Use Water for Ballast

Step 3

After completing **Step 2**, and with the LANDBLOCK® 15° and the panels installed in the appropriate position, fill the support with water using the hole.

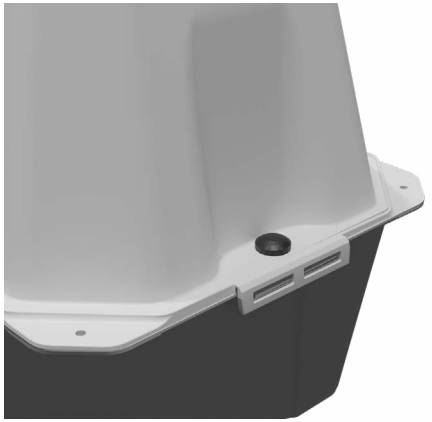




4 Fit the Plug

Step 4

Close the hole with the cover after you've finished filling the LANDBLOCK® 15°.



Your system is ready!

SAFETY AND BASIC MAINTENANCE

Factors to be taken into account depending on the type of rooftop, surface, wind load and evaporation

- ✔ LANDBLOCK® 15º should only be used as a ballasted support for solar panel systems. Using the support for any other purpose is outside the scope of the intended use and is not allowed.
- ✔ The design of the system is the responsibility of the installer. You must make sure that the solar system meets the requirements set forth in the building code.
- ✔ It is important to be aware of the meteorological conditions of the country /region where the system is being installed to calculate the ballast and adjust the supports. Landatu Solar S.L. can provide a spreadsheet for calculating the ballast needed for a system on request.
- ✔ If the roof has gravel, it is advisable to remove it slightly at the point where each support is placed in order to avoid possible cracks.
- ✔ For greater safety in the most exposed areas, you could choose:
  - The **2N+1 configuration** described in the manual Combining both configurations in a single project may be interesting: a **2N+1 configuration** for areas around the edges and an **N+1 configuration** for inner areas.
  - Other materials can be used as ballast in the base, like gravel, sand, fine gravel or concrete (close the LANDBLOCK® 15º before the concrete sets).
  - Guylines can be used. The lugs of the LANDBLOCK® 15º can be anchored with metal cables to perimeter walls or other attachment points.
  - Using or choosing these additional safety measures is the responsibility of the installer or project planner.
  - Wind deflectors can be added on the sides and back to reduce wind loads. They can be ordered from Landatu Solar.
- ✔ To improve the friction coefficient you can:
  - Use an adhesive between the support and the ground.
- ✔ LANDBLOCK® 15º has been tested to ensure that ballast water evaporation is minimal.

Basic maintenance

LANDBLOCK® 15º maintenance is simple and economical.

Suitable PPE (personal protective equipment) for the job you will be doing must be used.

Recommended at least once a year

- ✔ Check that the supports are in good condition and there are no water leaks
- ✔ Confirm that the weight of the ballast matches the weight it was designed for.
- ✔ Check the condition of the bolts and whether they are tightened correctly
- ✔ Check the rest of the parts of the structure, if there are any (non-slip mats, adhesives, guylines).
- ✔ Check the water level in the holders and add more if necessary.

The entire photovoltaic system should be checked at least once a year (module cleanliness, connections, protective devices, etc.). If you need to open a LANDBLOCK® 15º for any reason you should use pliers and pry from the centre of the closure.

We optimise the use
of surfaces to generate clean and
sustainable energy

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