LANDATU
SOLAR

USE AND INSTALLATION MANUAL

# LANDBLOCK® 0°

## SUPPORTS WITH WATER BALLAST

WITH COPLANAR SYSTEM FOR SOLAR SYSTEMS
ON ROOFTOPS OR PASSABLE FLAT SURFACES

PRODUCT PATENTED LANDATU SOLAR

DEKRA zertifiziert

TÜV SÜD Strength Test

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V260710

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Fast installation

Without perforating the rooftop

Without heavy machinery

⚠ This use and installation manual must be followed for LANDBLOCK® 0° installation.

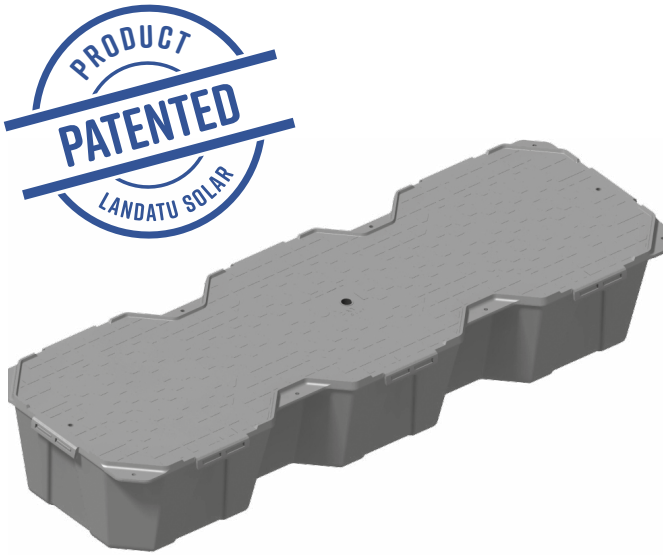
# LANDBLOCK® 0º
## WITH COPLANAR SYSTEM

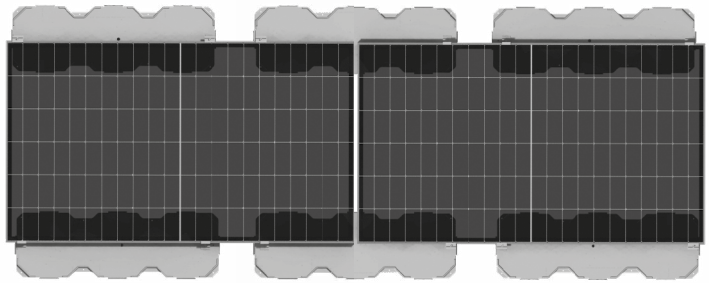
LANDBLOCK® 0° is a support with water ballast that is perfect for installing solar systems on any flat surface (rooftop, ground, etc.).

**Simplify solar panel installation with LANDBLOCK® 0° and forget concrete supports.**

| **Technical Information** | |
|---|---|
| Composition | HDPE plastic |
| Support tilt angle | 0° |
| Weight (without ballast) | <4 kg |
| Dimensions | 380 × 1150 × 192 mm |
| Units/pallet | 100 units |
| Ballast capacity | 55 L (water), more than 100 kg (gravel, sand, concrete...) |

## SUPPORTS WITH WATER BALLAST THE BEST SOLUTION FOR SOLAR SYSTEMS!



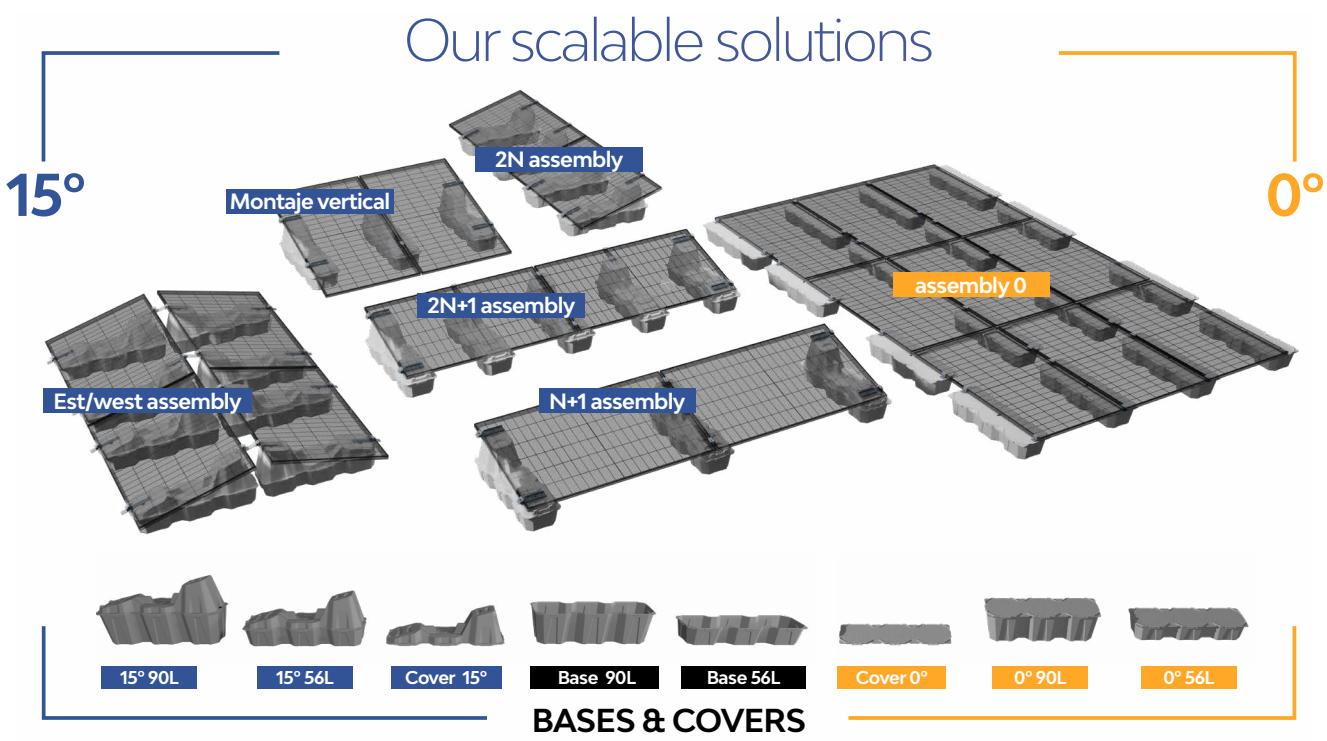
### Advantages

- ✔ 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® 0° lets you adjust the ballast weight depending on the rooftop.
- ✔ Evaporation tests have been done that show the water doesn't evaporate.

# INTENDED USE

## Intended use

- ✔ LANDBLOCK® 0° 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 less than 4 kg, so you DON'T need to use a forklift or other lifting device.

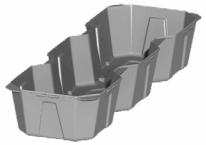
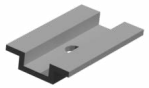
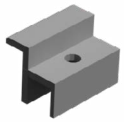
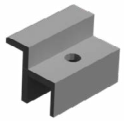


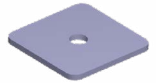

**Required tools**

- M8 allen key

# LANDBLOCK® 0° MATERIALS



| Included | Part | Reference |
|---|---|---|
| 15° LANDBLOCK® cover | | 7002-001-OP2 |
| LANDBLOCK® Base |  | 6001-001-OP01 (56L)<br>6002-001-OP01 (90L) |
| 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 |
| M8 × 40 mm stainless steel allen screw. | | 9026-001-OP01 |
| Grower washer M8 stainless steel. | | 9024-001-OP01 |
| M8 stainless steel hex nut. | | 9028-001-OP01 |
| Round plug ø22 mm | | 9001-001-OP01 |

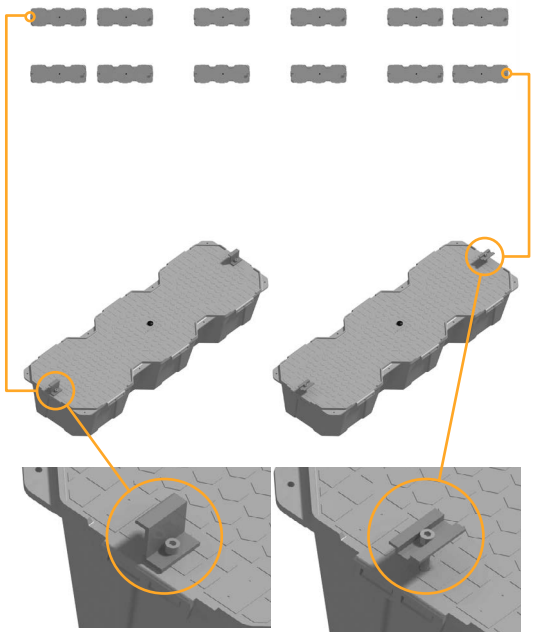
| Tools needed |
|---|
| Allen torque wrench for M8 |
| Wrench for M8 |
| Electric screwdriver (riveter) |

# INSTALLATION IN JUST 4 STEPS



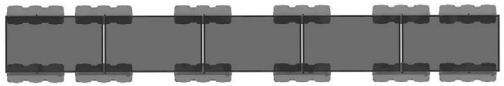
1

## INSTALL THE LANDBLOCK® 0° AND INSTALL THE CONNECTORS



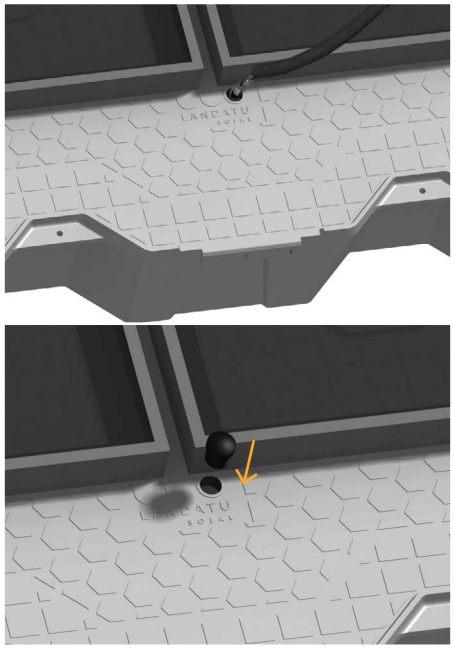
2

## INSTALL THE PHOTOVOLTAIC PANELS



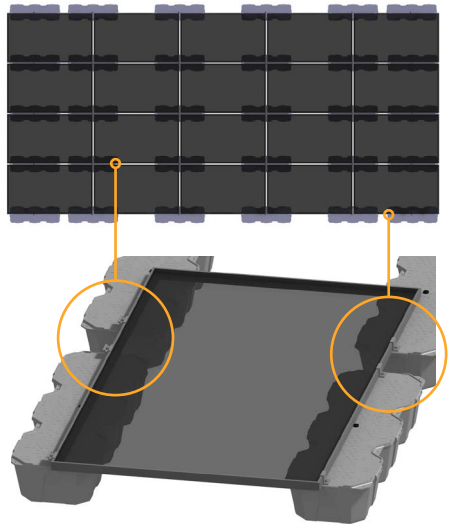
3

## BALLAST THE LANDBLOCK® 0° AND INSTALL THE PLUG



4

## FASTEN THE CONNECTOR CLIPS TO THE PANELS



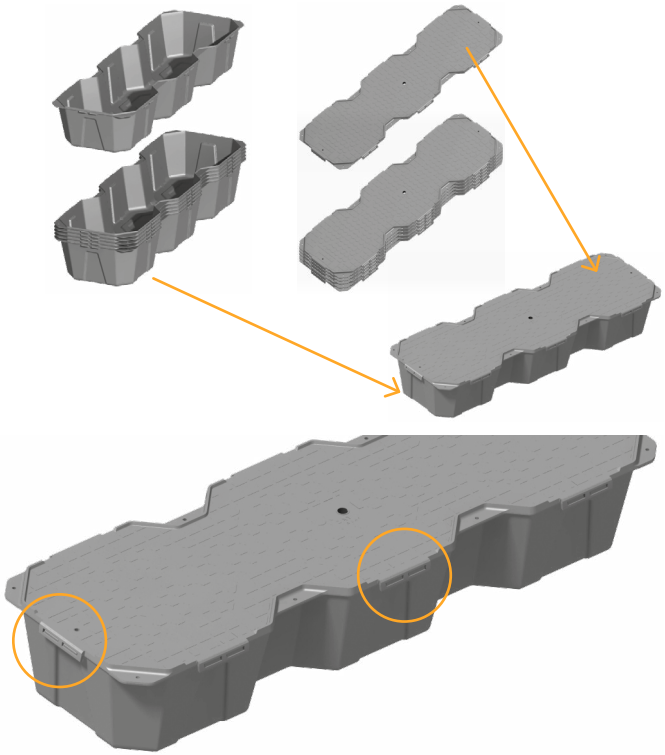
# 1 LANDBLOCK® 0º Positioning

## Step 1 A

To assemble the LANDBLOCK® 0º 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.

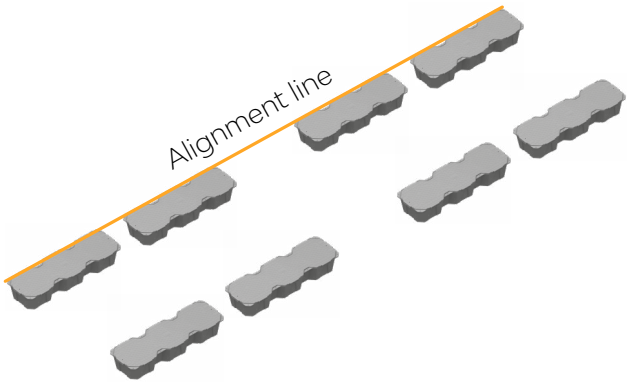
**Recomendation:** To further ensure a secure seal, we recommend fitting a clamp to each of the 8 holes in the bracket.

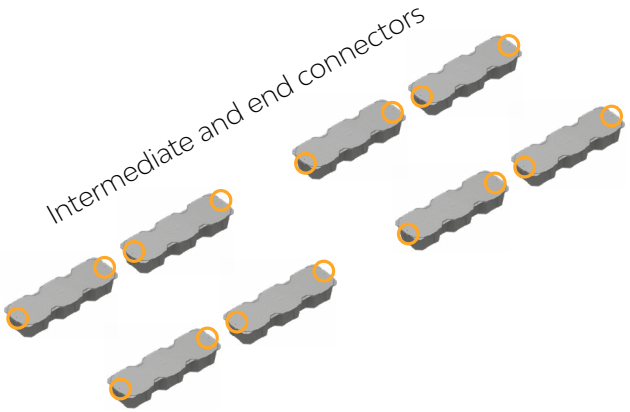


## Step 1 B

Position the first two rows of LANDBLOCK® 0º and place the fixing clips in the inserted nuts of the support.

**Recomendation:** Put the first and last LANDBLOCK® 0º 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® 0º.

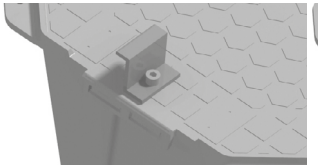


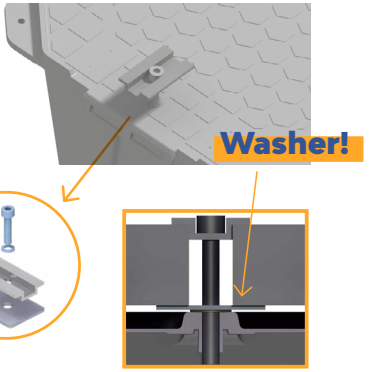

**Attention!**

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.

End of Line clips



Intermediate clips



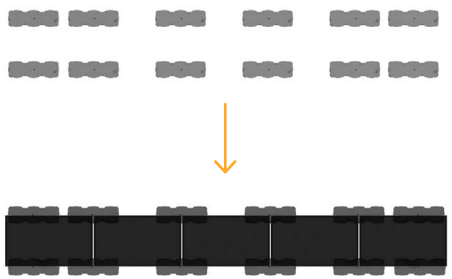
# 2 Place the solar panels

## Installation

**Valid configuration for all panel types**

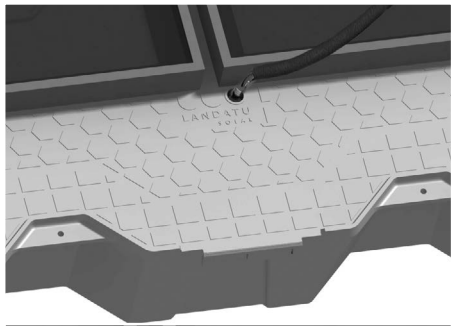
### Step 2A

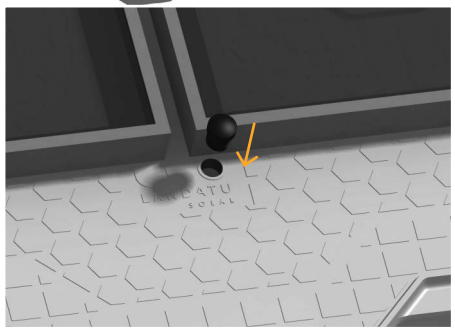
Place the photovoltaic panels on the first two rows of LANDBLOCK® 0º.

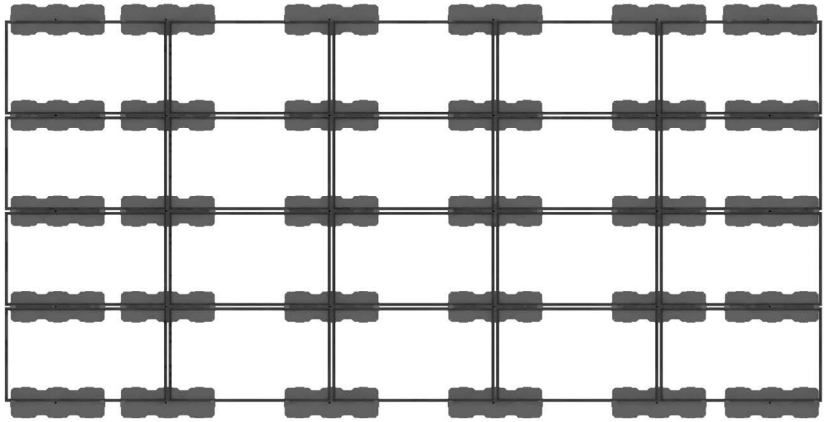


### Step 2B

At this time, ballast the supports with water through the fill hole and place the plug (**Step 3**).







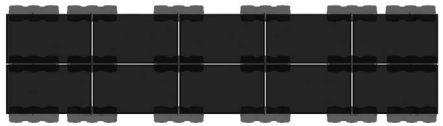
Assembly diagram

### Step 2C

Position the next row of supports and panels and repeat steps 2A and 2B above.

Tighten the previous fastening clips.

**Recommended tightening torque: 10 Nm.**



### LANDBLOCK® 0º Material

- ✔ LANDBLOCK® 0º Base
- ✔ LANDBLOCK® 0º Cover
- ✔ 1 plug × LANDBLOCK® 0º

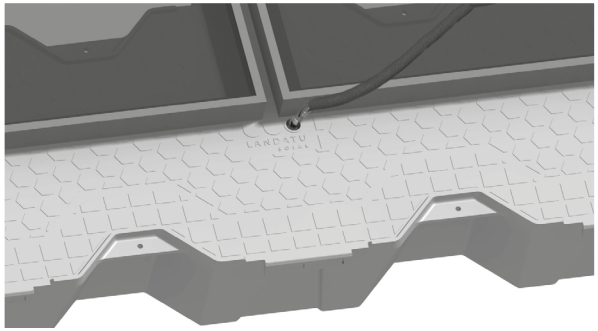
**Perfiles necesarios:**

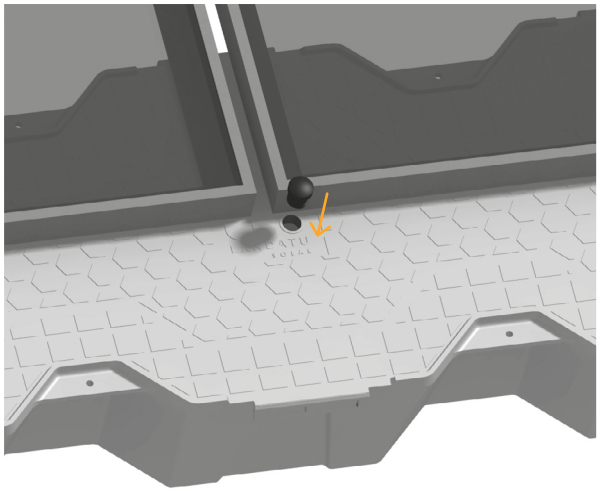
End clamps:
4 × (no. of columns+ 1)

Middle clamps and square washer: 2 × (no. of rows -1) × (no. of columns + 1)

Supports:
(no. of rows + 1) × (no. of columns + 1)

# 3 Ballast the Landblock® 0º and place the plug

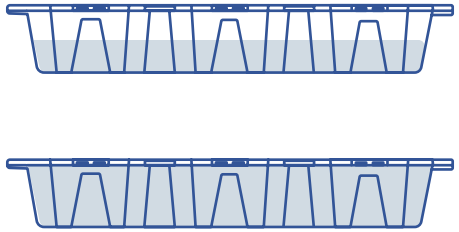




### Step 3A

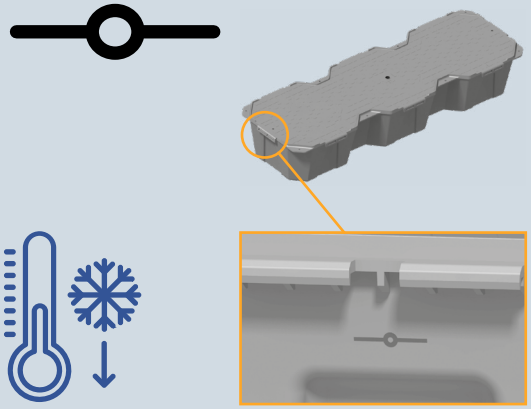
Introduce the water through the hole shown in the image.

**Note:** In case of ballasting the support with another material (concrete, gravel, sand...) you must do so before placing the cover (**Step 1**).



### Step 3B

Once ballasted, be sure to close the hole tightly with the supplied plug.



### Considerations for cold climates

In climates where the water is susceptible to freezing, it is not recommended to fill more than 47 L.

For this purpose, the LANDBLOCK® 0º has a level marker. It is advisable to drill a hole to make sure you do not exceed 47L and introduce water through the filling hole in the lid until excess water begins to come out of this second hole. This way, you ensure that the recommended capacity is not exceeded and that sufficient space is available to assume the increase in volume due to freezing.

Once filled with water, cover the hole made with tape.

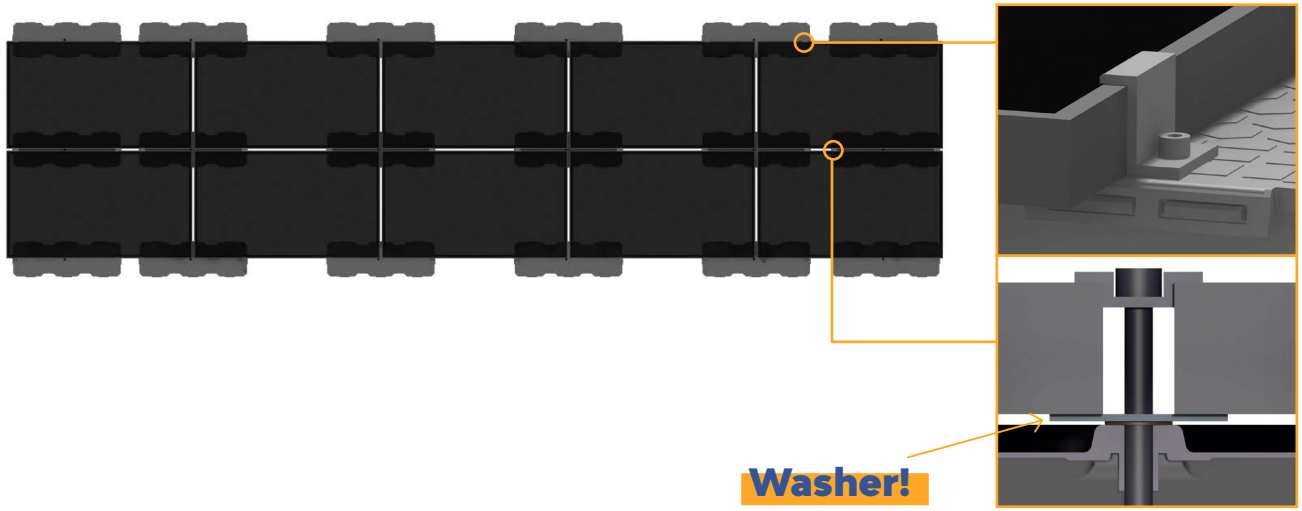
If you want to avoid this step, you can dissolve antifreeze in the water.

# 4 Tighten the connector clips

### Step 4A

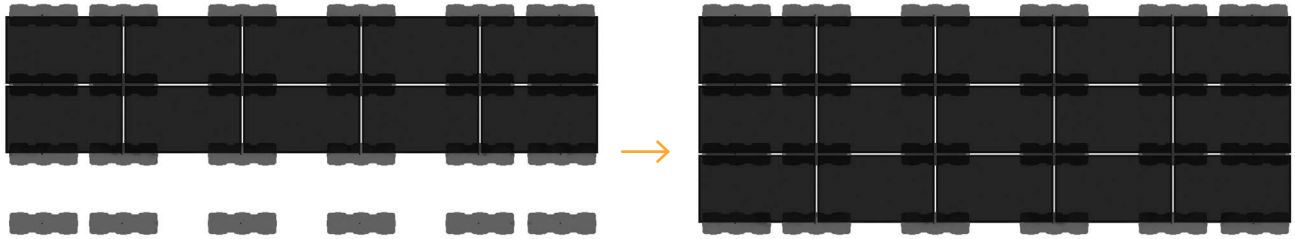
With the supports ballasted and the panels on the first three supports, tighten the connecting clips (end-of-line and intermediate clips).

**The recommended tightening torque is 10 Nm.**




### Step 4A

Attach the next row of supports and panels and repeat the above steps until the installation is complete.



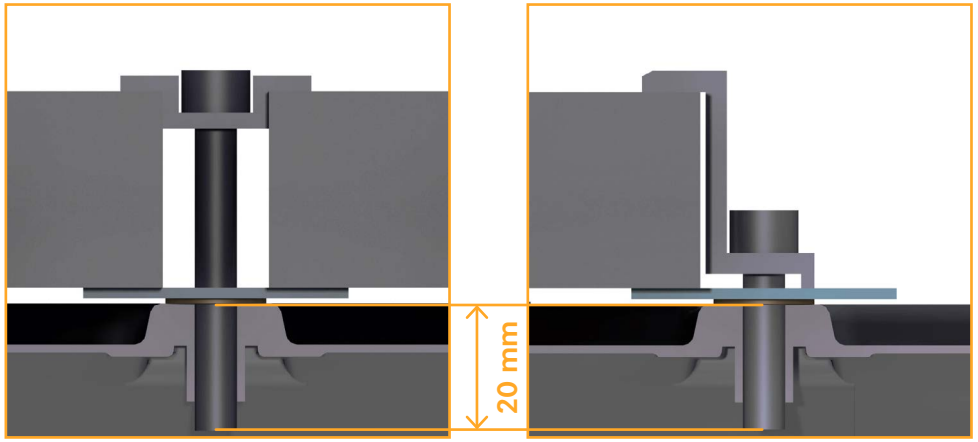
# ANNEXE
# Specifications for bolt lengths

## Required bolt length

The length will depend on the thickness of the panel and the design of the connectors (Middle and end clamps). The installer is responsible for checking and installing a bolt that is inserted and threaded into the M8 nuts of the support is at least **20 mm**. (panel support plane or square washer support plane).

Likewise, the required bolt length must be greater than the sum of the distance of the horizontal plane (**h**) + the **20 mm** length of the threads.

Length required = **>h+20 mm**




⚠ The installer is responsible for using connectors that meet those conditions.

# BASIC SAFETY AND MAINTENANCE

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

- ✔ LANDBLOCK® 0º 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:
  - Other materials can be used as ballast in the base, like gravel, sand, fine gravel or concrete (close the LANDBLOCK® 0º before the concrete sets).
  - Using or choosing these additional safety measures is the responsibility of the installer or project planner.
- ✔ To improve the friction coefficient you can:
  - Use an adhesive between the support and the ground.
- ✔ LANDBLOCK® 0º has been tested to show the ballast water doesn't evaporate.

## Basic Maintenance

LANDBLOCK® 0º 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 tightening torque and condition of the bolts.
- ✔ Check the water level in the holders and add more if necessary.

Check the rest of the parts of the structure, if there are any (non-slip mats, adhesives, guylines).

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® 0º for any reason you should use pliers and pry from the centre of the closure.

We simplify the installation of solar panels to generate clean and sustainable energy

LANDATU SOLAR

PRODUCT PATENTED LANDATU SOLAR

DEKRA zertifiziert

TÜV SÜD Strength Test

info@landatusolar.com
**www.landatusolar.com**