SOLARBLOC<sup>®</sup> **ATT** pretensados**durán** 

# ROOFING AND FLAT SURFACES

**PIONEERS IN THE INNOVATION AND DEVELOPMENT** OF CONCRETE STRUCTURES FOR SOLAR PANELS.

# **SOLARBLOC**<sup>®</sup> **IN** PRETENSADOS**DURÁN**

**ROOFING AND FLAT SURFACES** 



### Make everything as simple as possible with **SOLARBLOC**°







SOLARBLOC<sup>®</sup> is a structure and **anchor-free mounting system** for the installation of solar panels on roofing or flat surfaces.

SOLARBLOC<sup>®</sup> is a precast concrete **support designed to simplify the installation of solar panel systems and lower costs** by reducing the amount of materials needed.

SOLARBLOC<sup>®</sup> supports are developed with a geometry and mass that counteract wind power and external agents, **while enabling solar panels to be fixed to them directly.** 

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With SOLARBLOC<sup>®</sup>, there is no need to install a metal structure.

SOLARBLOCO

1 1 111111

25°

No holes have to be drilled in the roof, meaning that its **waterproofing** is not affected.

Make everything as simple as possible: just position the supports in the designated area and fix the panels to the SOLARBLOC<sup>®</sup> support.

SOLARBLOC

#### Advantages of SOLARBLOC®:

- PV mounting system comprising a single module.
- Self-ballasting concrete support.
- Panel mounted onto a trough built into the support.
- Eliminates the need for a metal structure.
- Eliminates the need to drill holes and use roof anchors.
- Reduces the time taken to mount PV systems.

#### Installing SOLARBLOC<sup>®</sup>

Position the SOLARBLOC<sup>®</sup> supports in the desired area.
Insert the panel clamps in the concrete trough.
Install the panels on the support.

#### **Technical data:**

- Composition: concrete.
- Support angles: 0°, 3°, 10°, 12°, 15°, 18°, 28°, 30°, 34°.
- Weight by angle: 25 kg, 50 kg, 60 kg, 68 kg, 71 kg, 77 kg.
- Panel attachment: using a trough and bolts.
- Dimensions: length (50,60,100,110) width (13,20,23) in cm.
- Units/pallet: 48-24-20 -16



### Con SOLARBLOC<sup>®</sup> para cubiertas o superficies planas minimizará costes:

• Simple and quick to install.

www.solarbloc.es/en/ www.pretensadosduran.com

SOLARBLOC®

### **SOLARBLOC 0° Structure**

All solar panels in an installation are not always positioned in the same way. The characteristics of the building, the weather conditions and the obstacles surrounding the house or business determine how we install our solar panels.

A 0° Structure is a system of laying solar panels that utilises the pitch of the roof where the photovoltaic system is to be installed.

**This new SOLARBLOC 0° system** works as a self-ballasted structure, just like the entire SOLARBLOC range, removing the need to drill holes in the support area and thus eliminating the risk of roof leaks.

This system is mainly used on roofing and flat surfaces with a maximum pitch of 10%. The SOLARBLOC 0° Structure mirrors the roof pitch, allowing the installation, which has a maximum height of 12.5 cm, to be seamlessly integrated into the design of the roof.



SOLARBLOC®

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SOLARBLOC® COPLANAR 0°



A SOLARBLOC PRODUCT MAXIMUM RECOMMENDED PITCH 10%

Approximate weight: 25 kg

Measurements in mm

# SOLARBLOC<sup>®</sup> IN PRETENSADOS**DURÁN**

### Characteristics of installations with SOLARBLOC 0° supports.

1. Easy to integrate architecturally, manoeuvre and install thanks to their light weight.

2. Increased power of the roof installation as no shadows are cast on the other panels.

- **3. Lower load transmitted to the roof** as they weigh only 25 kg.
- 4. Adaptable to all solar panels regardless of their size as they are individual supports.

5. A configuration using SOLARBLOC 0° supports makes the photovoltaic installation extremely resistant to wind loads.



### SOLARBLOC® 0° SUPPORT MOUNTING POSITION



A MINIMUM OF 2 SOLARBLOC® BASE BLOCKS ARE NEEDED ALONG THE LENGTH OF THE PANEL



REINFORCED INSTALLATION 2 SOLARBLOC® BASE BLOCKS ALONG THE LENGTH 1 SOLARBLOC® BASE BLOCK ALONG THE WIDTH

BASE BLOCKS REQUIRED BETWEEN ROWS TO JOIN THE INSTALLATION TOGETHER







TO JOIN THE INSTALLATION TOGETHER

\*The installation considerations in terms of the type of roof, surface and wind load for the SOLARBLOC 0° system are the same as for the rest of the SOLARBLOC range given that they are the same kind of structures but with different tilt angles.

### **SOLARBLOC® IN** PRETENSADOS**DURÁN**

### **SOLARBLOC**<sup>®</sup> ASSEMBLY INSTRUCTIONS



#### **CHOOSE** THE SUPPORT AND TILT ANGLES that are most suitable (0°, 3°,10°,12°,15°,18°,28°,30°,34°)

SOLARBLOC<sup>®</sup> for Roofing and Flat Surfaces enables the solar panels to be fixed directly to the support, meaning that there is no need to install a structure.

SOLARBLOC<sup>®</sup> supports are manufactured in eight different angles (0°, 3°, 10°, 12°, 15°, 18°, 28°, 30°, 34°).

The most suitable support angle must be chosen taking into account the installation requirements.





After selecting the angle, mark the area where the SOLARBLOC<sup>®</sup> supports will be positioned for the solar panel installation.

The ground or surface on which the SOLARBLOC supports rest must be flat, otherwise it must be levelled. Gravel can be used to level earth.

The supports must be embedded into the gravel (a few centimetres) to prevent them sliding.



# SOLARBLOC<sup>®</sup> **ALL** PRETENSADOS**DURÁN**



### 3º POSITION THE **SOLARBLOC**<sup>\*</sup> SOPORTES

The structures weigh between 25 kg and 77 kg, depending on the tilt angle of the support; therefore, we recommend moving them using a hand truck or similar.



**1.** Move the supports to the selected area.

2. Position the first and last supports in the row. Join them using a staking-out line along the top to check the levelling and alignment.



**3.** Complete the row with the SOLARBLOC<sup>®</sup> supports according to the established set-up.

#### 3.2. Considerations in terms of the type of roof, surface and wind load

**3.2.1.** We recommend bonding the supports to the support surface with one or two adhesive strips, increasing the weight of the SOLARBLOC<sup>®</sup> supports by adding ballast blocks, and doubling the number of SOLARBLOC<sup>®</sup> supports per panel to **increase resistance to wind** greater than force 9 on the Beaufort scale (strong gale).

#### BONDING THE SOLARBLOC® SUPPORT ON THE BASE



# **SOLARBLOC**<sup>®</sup> **AND** PRETENSADOS**DURÁN**



**3.2.2.** SOLARBLOC supports must be bonded to surfaces with a low friction coefficient using adhesive to prevent them from sliding.

If the supports cannot be bonded using adhesive, **a membrane made from rubber, neoprene or any material** that increases friction must be placed between the base of the SOLARBLOC<sup>®</sup> structure and the support surface. Using these membranes helps protect the roof's waterproofing.

The purpose of this is to increase the support's resistance to wind load.



\*It is the responsibility of the project planner and assembly operator to measure the structure of the photovoltaic installation, and also to decide the additional steps to be taken to protect it.



#### INSTALL THE ANCHORS ON THE SOLARBLOC® SUPPORT

After positioning the supports, the metal anchors are installed on the SOLARBLOC<sup>®</sup> support as follows:



# **SOLARBLOC® ALLE** PRETENSADOS**DURÁN**

SOLARBLOC®

### **2.** Insert the assembled anchor into the concrete trough from the side of the SOLARBLOC<sup>®</sup> support.

\*Both the end- and omega clamps must be positioned at the midpoint of the concrete trough; if this is not possible, they must be a minimum of 5 cm from the edge.

#### POSITION OF THE PANELS AND USE OF REINFORCEMENTS

#### depending on the tilt and size.

5º)

This information is based on the manufacturer's recommendations for reinforcing installations that are exposed to high wind loads. PREVIOUSLY calculated and approved by installation companies.

USE OF ANTI-BUCKLING SYSTEM REINFORCEMENT WITH HORIZONTAL MODULE HIGHLY RECOMMENDED FOR: \*PANEL >2,00 M WITH THICKNESS <45mm

USES OF SOLARBLOC® REINFORCEMENT BALLAST BLOCKS ON ROOFING				
$\checkmark$	Recommended			
$\checkmark$	Strongly recommended			
<b>~~ 0</b>	Obligatory on the side			
<b>~~</b> B	Obligatory on the base			
<b>~~0</b>	B Obligatory on the side or base			

TILT ANGLE	HORIZONTAL PANEL ≤ 1,65 M	VERTICAL PANEL ≤ 1,65 M	HORIZONTAL PANEL ≥ 1,75 M	VERTICAL PANEL ≥ 1,75 M
SOLARBLOC <sup>®</sup> 3 <sup>º</sup>	~	~	~~	~~
SOLARBLOC <sup>®</sup> 10 <sup>º</sup>	~	$\checkmark\checkmark$	~~	<b>~~</b> B
SOLARBLOC 12º	~	~~	~~	<b>~~</b> B
SOLARBLOC 15º	~	~~		<b>~~ B</b>
SOLARBLOC 18º	~	~~	<b>~~ C</b> B	<b>~~ B</b>
SOLARBLOC 28º	~	Incompatible 🛇	~~ O	Incompatible 🛇
SOLARBLOC 30º	~	Incompatible 🛇	~~ O	Incompatible 🛇
SOLARBLOC 34º	~	Incompatible 🛇	~~ O	Incompatible 🛇

# SOLARBLOC<sup>®</sup> IN PRETENSADOSDURÁN



### **INSTALL** THE SIX SOLAR PANELS ON THE **SOLARBLOC** SUPPORT

Once the anchors have been fixed to the SOLARBLOC<sup>®</sup> support, the panel frame is attached to the upper inclined part of the SOLARBLOC<sup>®</sup> support.

\*Check the manual of the panel to be installed to verify the type of installation required. SOLARBLOC<sup>®</sup> has a range of installation accessories. Contact us for further information.

#### STEPS TO INSTALL THE PANELS:

**1. Rest the panel edges** on the inclined surface of the SOLARBLOC<sup>®</sup> support.

**2.** Mount the panel on the SOLARBLOC<sup>®</sup> support, centring it so that it does **not protrude more on one side than on the other**, and attach the anchors to the panel frame.

**3.** Finally, position the next panel and tighten the anchors to fix them in place using the tightening torque of the panel.



\* Maximum tightening torque: 17 Nm



Each support includes the metal anchors required to fix the panels in place.

# **SOLARBLOC® AND** PRETENSADOS**DURÁN**



### SOLARBLOC® ACCESSORIES

For the complete installation of the panels, SOLARBLOC<sup>®</sup> offers accessories that will help you in the following situations.

#### SOLARBLOC® ANTI-FLEXING SYSTEM.



The SOLARBLOC Anti-flexing System increases the number of clamping points to six, making installations with larger solar panels more stable.

### TILT AND SURFACE IRREGULARITY COMPENSATION ON ROOFING.



By combining our levelling bolts and trough sections, it is possible to compensate for the irregularities on most roofs to allow water to properly run off.

#### EARTHING PLATE.



For roofing and flat surfaces. Establishes equipotential bonding continuity in the photovoltaic panel tables, facilitating their grounding.

For installation on the anchor. \*Material: Stainless steel.

#### EARTH CLIP



For HS/2018 Establishes equipotential bonding continuity in the photovoltaic panel tables, facilitating their grounding.

\*Material: AISI 304

#### CABLE CLIPS



The solar cable clip is widely used when positioning cables for solar panel arrangements to help prevent damage to the cable insulation. It is made from high-quality stainless steel and is very easy to install, with no special tools required.

Installed on the flange of the panel frame or edge of the rail.

\*Material: Minimum 304 corrosion-resistant stainless steel.

Further information: solarbloc@pretensadosduran.com

## **SOLARBLOC® ALLE** PRETENSADOS**DURÁN**

### SOLARBLOC® ADAPTABLE TO ALL MARKETS

**PRETENSADOS DURÁN S.L.** has the capacity to supply its products throughout the world.

We work with groupage shipments, full loads and sea containers.

Thanks to its ease of use and simplicity, **SOLARBLOC**<sup>®</sup> is suitable **for any geographic location** and is highly valued by companies in the renewable energy sector.

**PRETENSADOS DURÁN S.L.** will study the possibility of its **SOLARBLOC**<sup>®</sup> products for any geographic location.

The **SOLARBLOC**<sup>®</sup> mounting system is an innovative and exclusive product designed, developed, manufactured and registered by **PRETENSADOS DURÁN S.L.** 



### PRETENSADOS DURÁN S.L. We will respond to any queries or questions about SOLARBLOC® products.

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