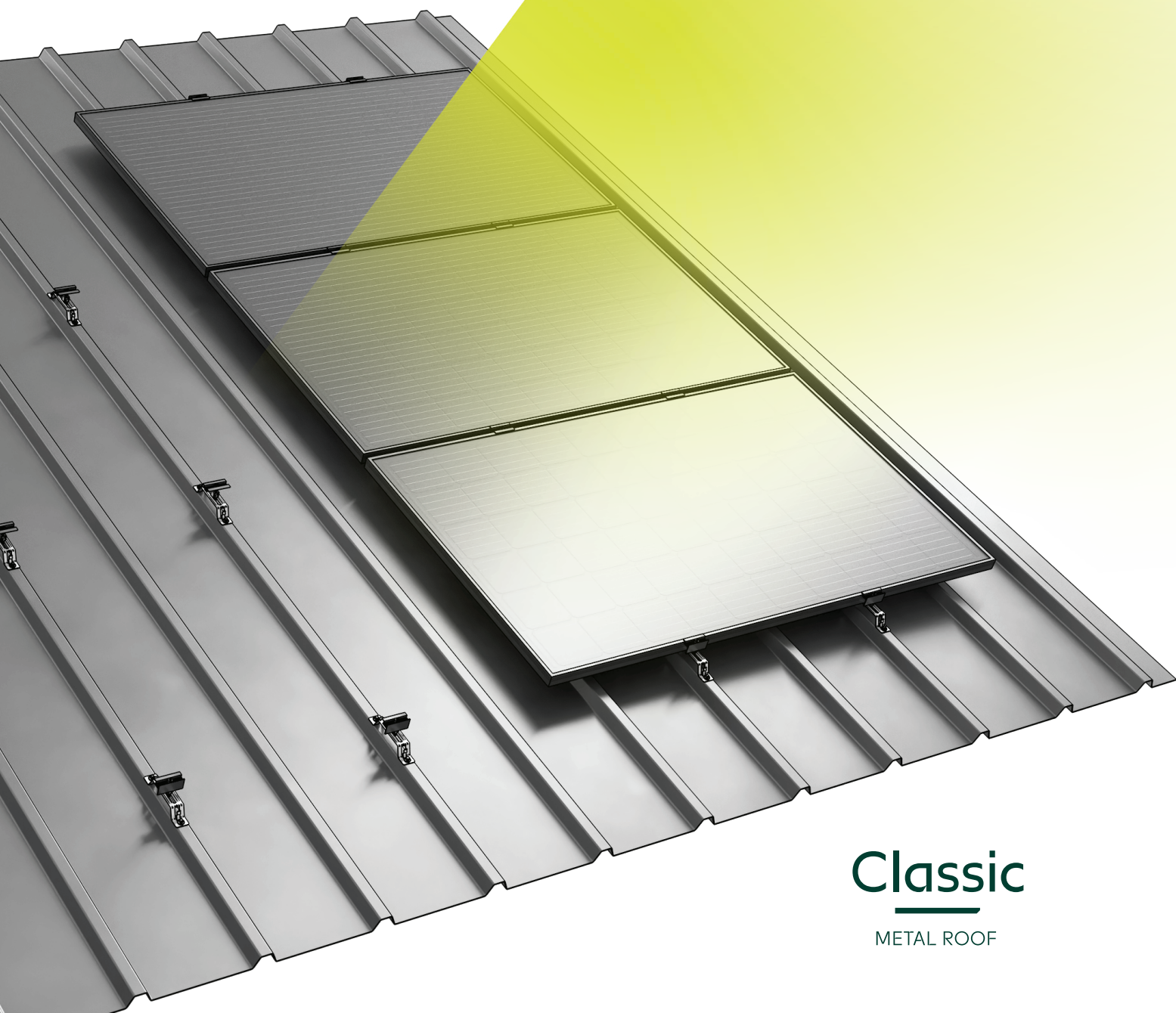


ENSTALL

blubase

Steel Roof Manual



Classic
METAL ROOF

! OBSERVE THE APPLICABLE OCCUPATIONAL HEALTH AND SAFETY REGULATIONS AT ALL TIMES

PREPARATION

Required tools:

- Measuring tape
- Rivet pliers
- Spiral drill
- Hexagon socket 8mm
- Hexagon bit 8mm

Scan the QR-code
for more information!



1. Check that the roof subsurface is sufficiently strong (replace if necessary).
2. Observe the NEN standards at all times.
3. Before installing, clean the roof thoroughly and measure any obstacles or barriers before you start mounting.
Always start your installation from north to south.

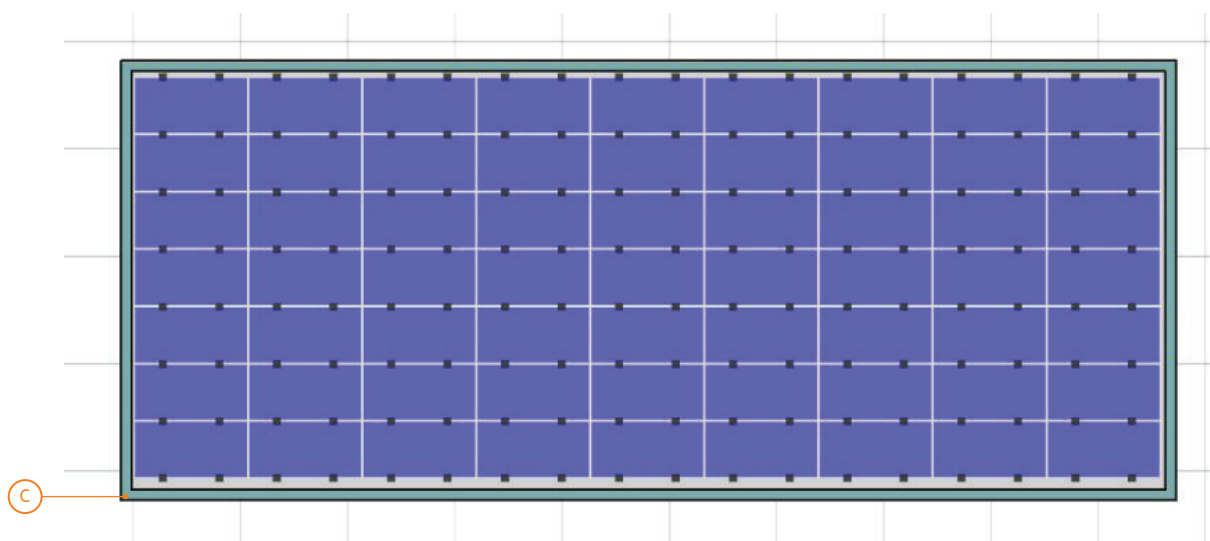
BEFORE YOU GET STARTED

Mounting a PV system changes the building load, which may affect the load-bearing structure. You should therefore have a qualified technician recalculate this load. In doing so, take account of the latest regulations, especially NEN 6702, NEN 7250, NEN1991-1-4 A1 + C2/NB and NEN 1991-1-3.

Also ask the insurer and the designer to approve:

- the loads on the building due to the additional weight of the PV system;
- the loads on the building due to the changed geometry of the roof plan;
- the loads on the building due to the dynamic wind pressure and precipitation;
- the loads on the building, the roofing and the insulation during mounting;
- the load of the contact points on the compatibility of the insulation and roofing;
- the compatibility of the roofing with the load-bearing structure at the contact points;
- the mutual effects from the thermal activity of the building and the PV system;
- the effects from possible movements in the roof and the PV system.

While care has been taken when producing the calculations and dimensions in the Blubase calculation tool, no rights can be derived from them. The prices are indicative and may vary; for example, due to rising prices of raw materials. You can find the general terms of delivery on eu.enstall.com



FREE EDGE REGION

NEN 7250 stipulates that solar panels should not be mounted all the way to the edge of the roof, where strong wind turbulence may occur. The region around the edge of the roof should therefore be free of solar panels: the free edge region. The minimum is 30 cm.

If you are mounting solar panels on roofs over 12 metres, you may need to take additional measures. Please consult your contact person.

Measure the free edge region from the outer border (see the blue border in Figure C). You can look up the size of the free edge region in the table. This information is also available in the ballast plan.

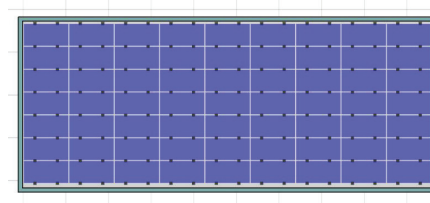
EQUALISATION

The Magnelis steel and aluminium provide the levelling automatically. This prevents the build-up of tension in the material and prevents inverter or micro-inverter malfunction. (NEN 1010).

MOUNTING PLAN

STAP 1

The working method is based on a layout plan and ballast plan produced by the Blubase calculation tool. Determine the first fixing point within the free edge zone and from there work from left to right and from north to south.

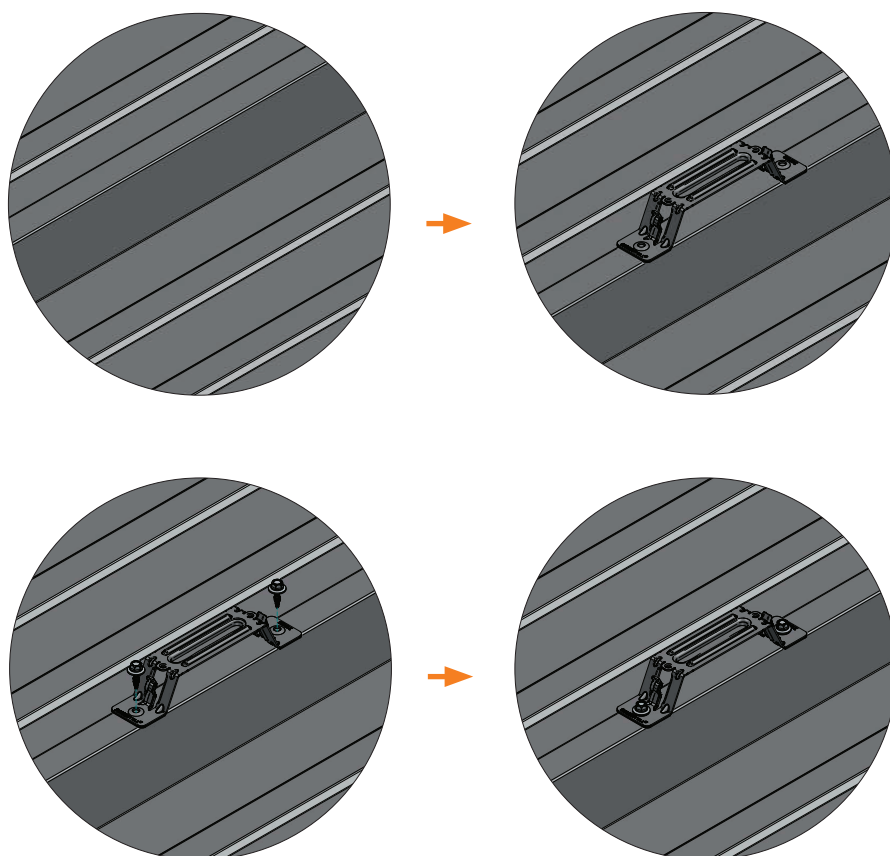


SCREW ON BRACKETS

STAP 2.1

Fix all brackets in accordance with your layout plan. Use roofing screws or pop rivets to do this.

Note: If you use pop rivets you will have to pre-drill!

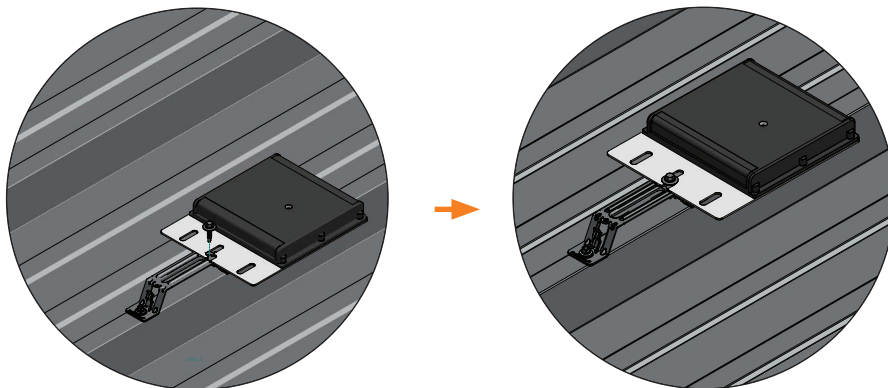


TORQUE 3 NM
(2 x SCREW / POP RIVET PER BRACKET)

OPTIMISER

STAP 2.2

If you are using optimisers, it is a good idea to fix these first.
Check the special fixing point.

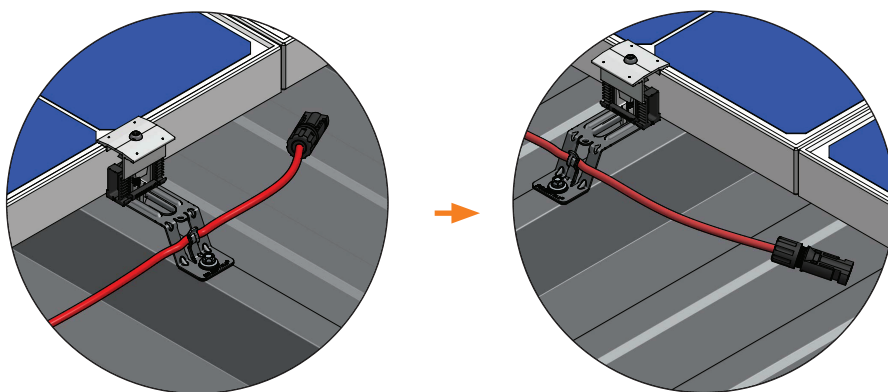


TORQUE 8 NM

DC-CABLES

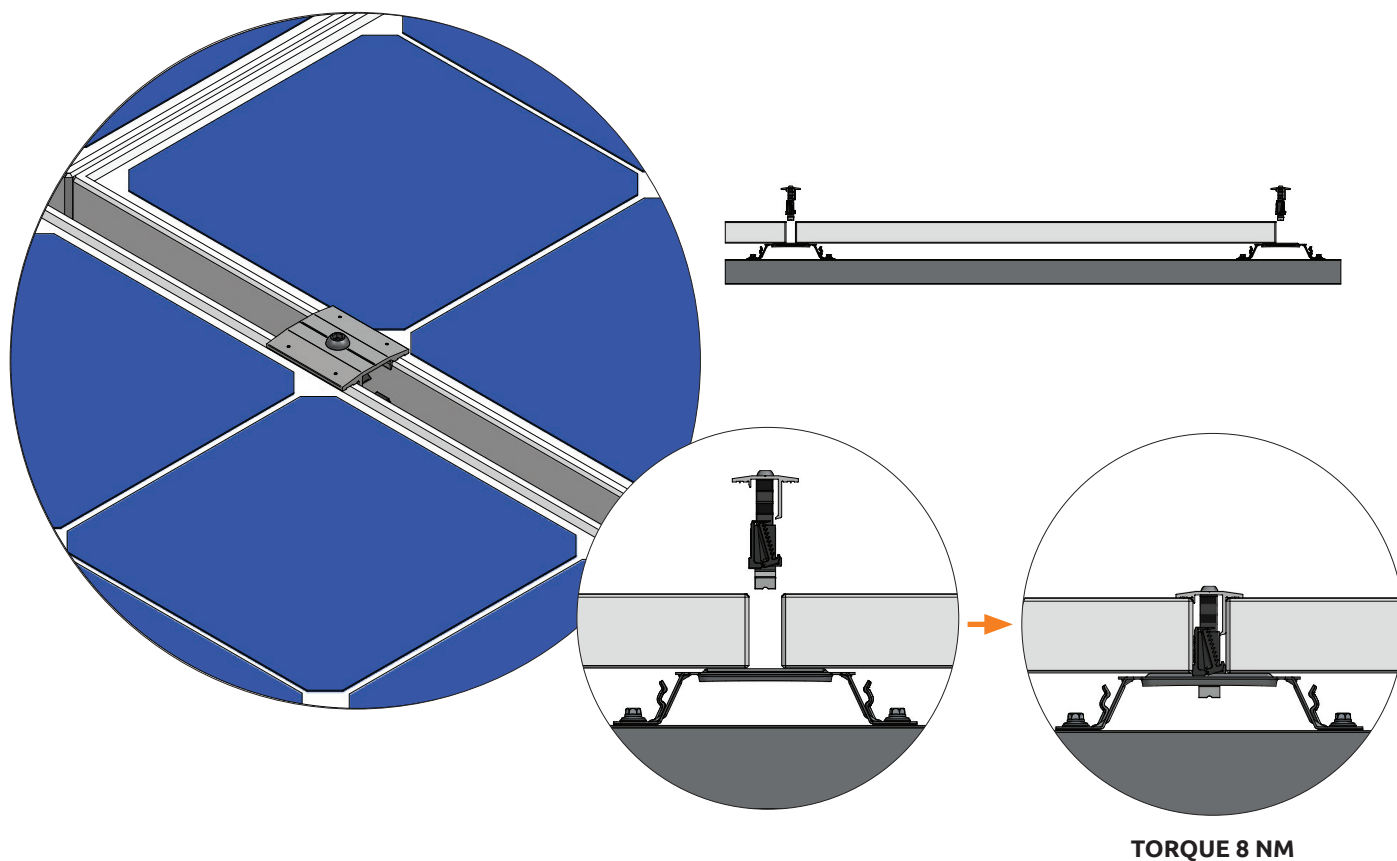
STAP 3

Lay all DC-cables in the fixing points.

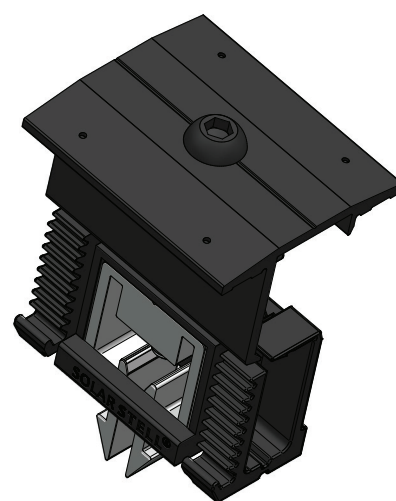


SOLAR PANELS**STAP 4**

Attach the solar panels using the Universal Quick Clamps.

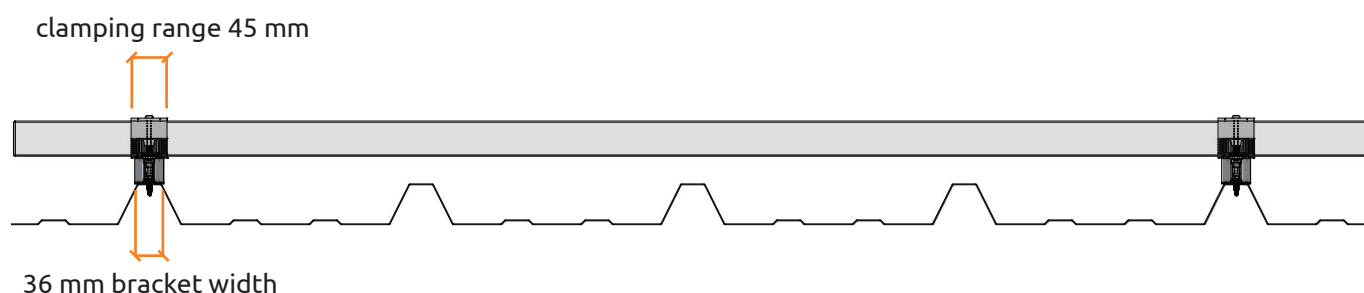
**OPTIONS**

Black Universal Quick Clamps are also available.

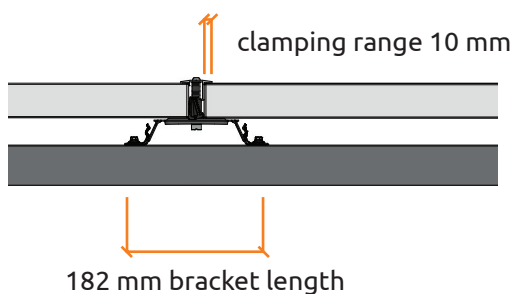


Product information	
Orientation	Landscape
Installation angle	From 8°
Materials	Magnelis
Roof type	Shed/Steel deck roofs Sandwich panel roofs
Solar panels	All normal PV modules
Warranty	The warranty is subject to the warranty terms and general terms & conditions of Enstall. These can be found on the website eu.enstall.com.

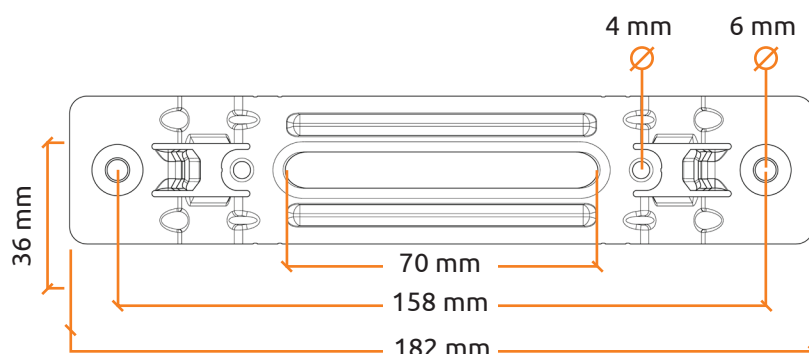
FRONT VIEW



SIDE VIEW



BRACKET TOP VIEW



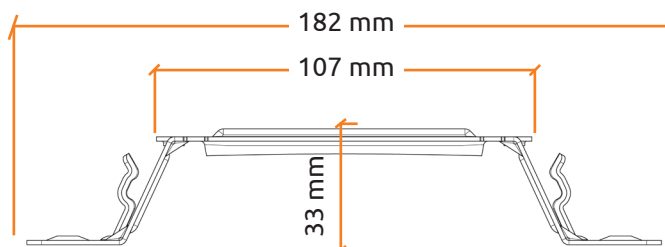
FREE EDGE ZONE

There may be strong, turbulent wind flows along the façade, so keep a zone free from solar panels at the edge of the roof. This should be at least 30 cm all around. NEN 7250: 2014

LEVELLING

The universal Easy clamp pierces the anodization on the aluminum frame of the panel. This ensures smoothing and prevents tension build-up in the material. This way there are no malfunctions with the inverters or microinverters. (NEN 1010:2015).

BRACKET SIDE VIEW



APPLICABLE NEN STANDARDS

EN-EN 1990 Eurocode: Basis of structural design
 NEN-EN 1991-1-3 Actions on structures - Snow loads
 NEN-EN 1991-1-4 Actions on structures - Wind loads
 NEN 7250 Solar energy systems - Integration in roofs and façades
 NEN-EN 1999-1-4 Design of aluminium structures
 NEN-EN 1997 Geotechnical design

DISCLAIMER

BLUBASE

- This manual is a general guide (and is therefore not specific to one project) for the straightforward and efficient installation of solar panels using the Blubase mounting system. No rights may be derived from this manual.
- For the installation of the next mounting system the buildings should have a height of max. 12 metres. If the building is taller, please contact Blubase in advance for a project-specific, customised solution.

IMPORTANT

- Installing solar panels on an existing building will change its structural load and/or construction. We therefore recommend that the structural calculations for an existing building are updated by a specialist, taking into account the solar panels to be placed and current regulations such as NEN6702, NEN7250, NEN1991-1-4+A1+C2:2011/NB:2011 and NPR 6708:2013 in particular for wind, snow and water loads.
- The building insurer must be contacted in advance.
- The following building-related elements should be checked and approved in view of the existing structural arrangements:
 - The additional weight load of the entire PV system that will be installed
 - Geometry change of the roof surface
 - Wind pressure, snow load and water load, with simulation of accumulations
 - The loads for the structure, roof coverings and insulation during the installation
 - The suitability of the roof covering and insulation (point pressure) at the contact points between the mounting system and the existing construction
 - The consequences of the thermal interaction between the building and the PV system
 - The consequences of any vibrations of the building and/or PV system