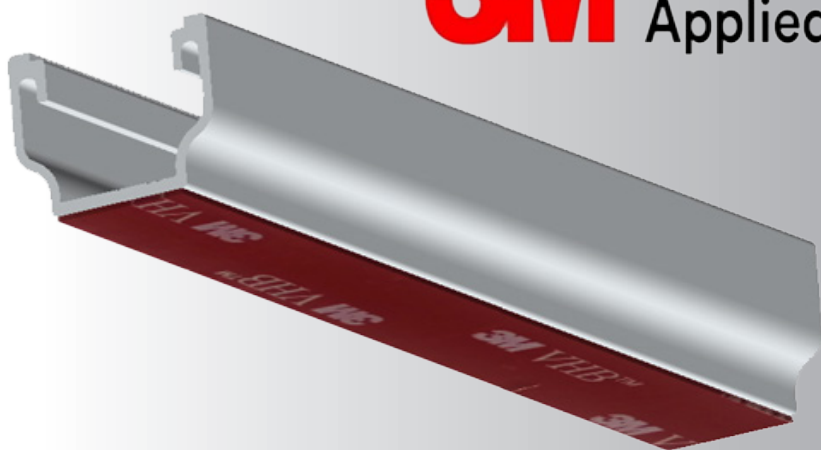


# INSTALLATION GUIDE

EASY PLAN **3M**

**3M** Science.  
Applied to Life.™



# ES ENERGY SYSTEMS

Energy Systems is a company with main office and headquarters located in Braga, within the north Portugal region. We are specialists in the development and production of photovoltaic mounting systems and carport structures, with standard or tailored solutions. Our main focus is to offer high quality and reliability products, that satisfy our customers needs. We have our own production and

engineering departments, with experienced professionals and always acting according with the Eurocode rules and standards. We develop and produce components and mounting systems with guarantee of high performance. All our products are designed and developed to become the assembly easier and faster, reducing the time spent on instalations.

[info@energysystems.pt](mailto:info@energysystems.pt)

+351 963 314 290

<http://www.energysystems.pt/>

# Easy Plan 3M

The Easy Plan 3M is produced under a rigorous process of engineering and quality, which ensure an excellent performance in the fixation of photovoltaic modules on different surfaces of application by bonding. The rail is made of extruded aluminium (EN AW-6060) with thermal treatments (EN 573-3 and EN 755-2) and it has **15 years** of manufacturing warranty. All the accessories are made of Stainless Steel A2, following the DIN ISO 4759/1 and DIN 267/2 rules. The fixation is made by an exclusive bonding technology with double-sided tape 3M. This solution was tested and analysed in the 3M

Laboratories, located in Madrid – Spain. In addition, Energy Systems made tests and prototypes to ensure the efficiency and safety of the solution in real environments, where the Easy Plan 3M was approved in all requirements. The bonding warranty is defined after a tailored analysis made by the Energy Systems Engineers in each project, according to the roof conditions and characteristics. For this reason, it is important to have the technical sheet and real images of the roof to indicate the warranty correctly. The period can vary up to **25 years**.



**3M** Science.  
Applied to Life.™

# General Information

Please note that this installation guide contains the steps to ensure a safety and reliable fixation of photovoltaic modules by bonding and it is exclusively used to the Easy Plan 3M. In addition to the orientations contained in this document, it is important to note the following aspects:

A PV system may have a high electric voltage and the install operations should be made by accredited professionals;

All the good engineering practices should be adopted;

Follow the applicable local laws and technical recommendations;

Act in compliance with healthy, safety regulations and accident prevention;

Use the right equipments and observe their conditions;

Roofs are dangerous, any fall protection safeguards should be used during the works;

Pay attention about the protective equipments such as helmet, boots, gloves and mask (if it needs);

Never work alone. In case of emergency you might need some help;

Environmental requirements must be respected;

Check the conditions of the roof structure;

The assembly instructions of the photovoltaic module manufacturer should be follow;

We are always looking for improve and develop a better guide to help all our customers to make as best work as possible. So, if you have important information to contribute in our process, please send your comments or suggestions to **info@energysystems.pt**. We are a very open-minded company.

# General Information

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The solution is supplied in complete kits, which are composed by:

1 Unit  
Aluminium profile  
Easy Plan 195mm  
with double-sided  
tape **3M**

1 Unit  
End or Middle clamp

1 Unit  
Nut with plastic clip  
M8 Stainless Steel A2

1 Unit  
Screw DIN 912 M8x35  
Stainless Steel A2

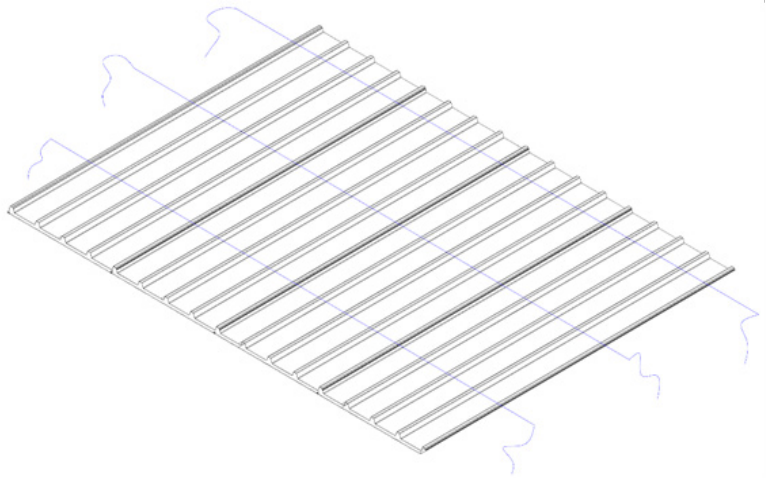
Primer 3M. 8,4fl for  
each 500 pieces.

\*Isopropyl Alcohol and oakum not included.

# Installation Steps

**1**

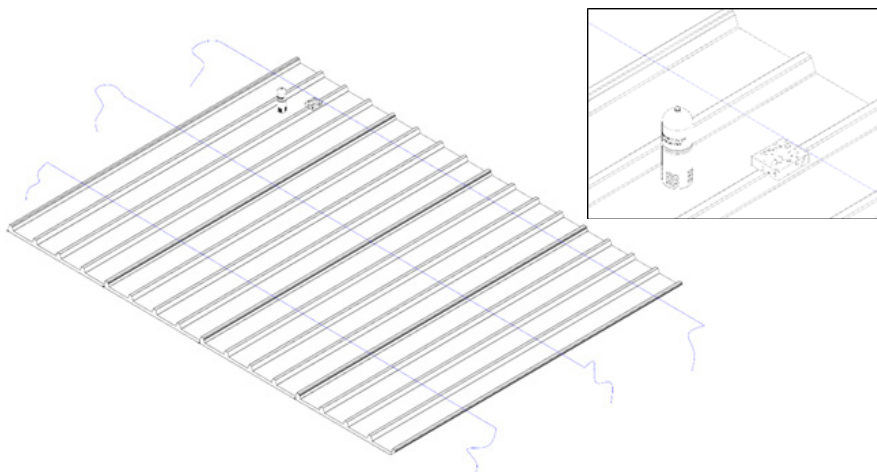
With a Chalk Line and a marker pen, **mark all** the fixing points in each line of modules.



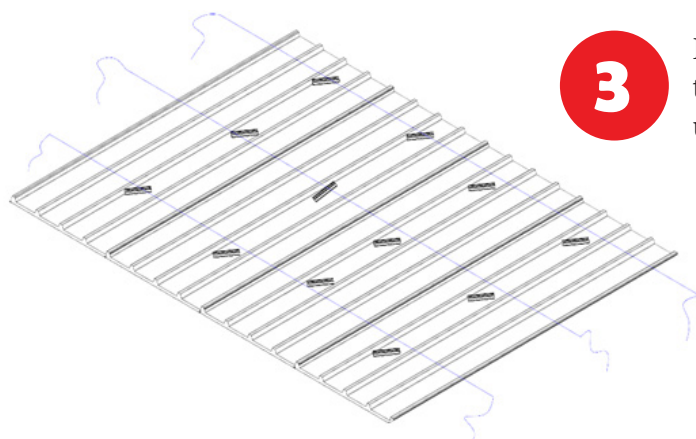
Please note that the Easy Plan 3M must be fixed on the top face of the roof (crown, crest); The end of the first/last module in the line must not be more distant than 40cm to the nearest fixing point.

**2**

**Clean all the points** where the Easy Plan 3M shall be applied, using isopropyl alcohol and a oakum or cotton waste. Wait about 15 minutes till the total evaporation.



# Installation Steps

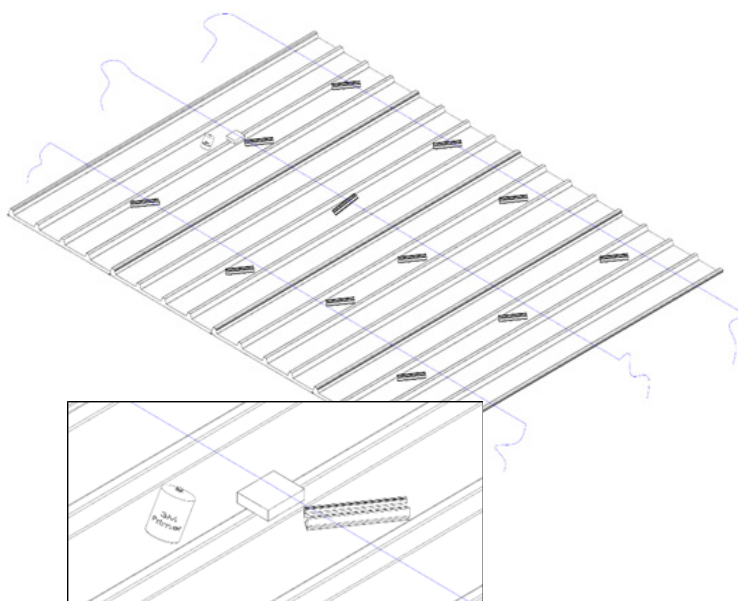


3

Distribute on the **roof all** the pieces which shall be used to fix the modules.

4

With a oakum or cotton waste, softly apply a thin layer of the Primer **3M**, which is supplied by Energy Systems, just on the points where will be installed the Easy Plan **3M**, without rubbing.

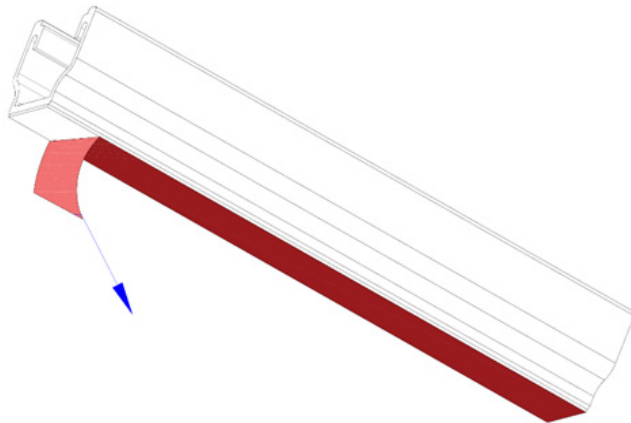


The Primer **3M** is essential to ensure a better adherence between the roof and the Easy Plan **3M**. Wait about 15 minutes till the total evaporation

# Installation Steps

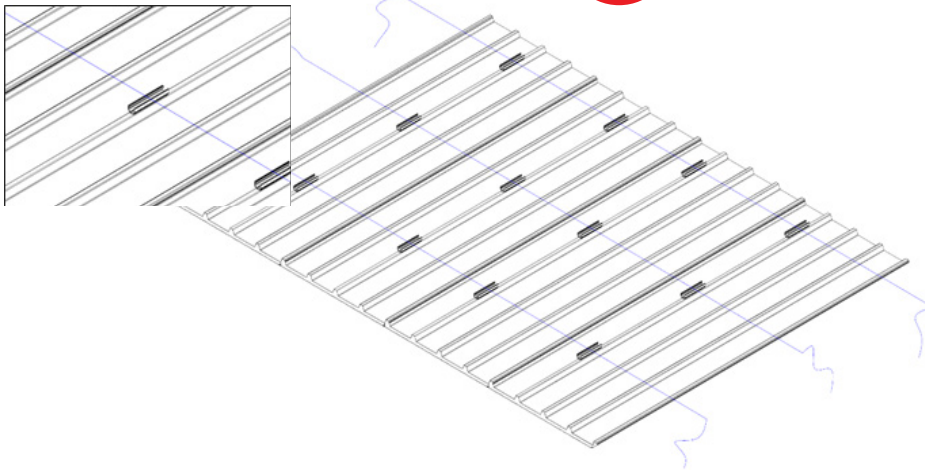
5

Immediately after the Primer application, the Easy Plan 3M can be installed. Get the first piece and remove the protective cover from the double sided tape.



6

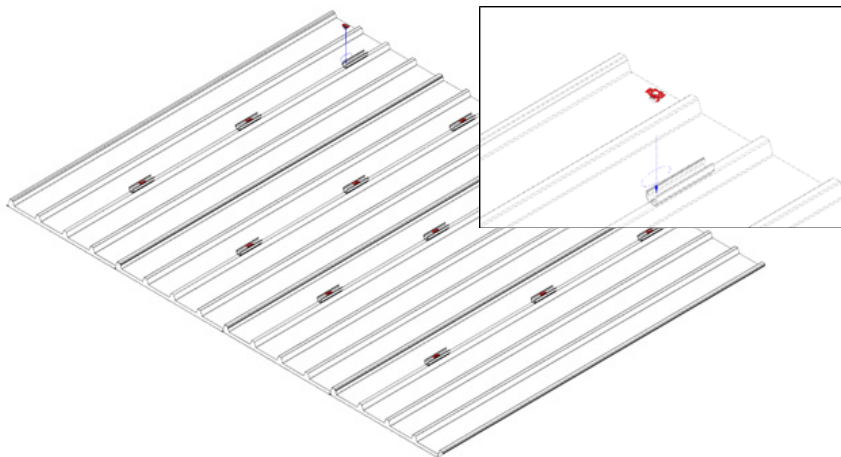
Position the Easy Plan 3M on the fixing point. Lightly press the piece against the roof with the hands by 3 seconds.



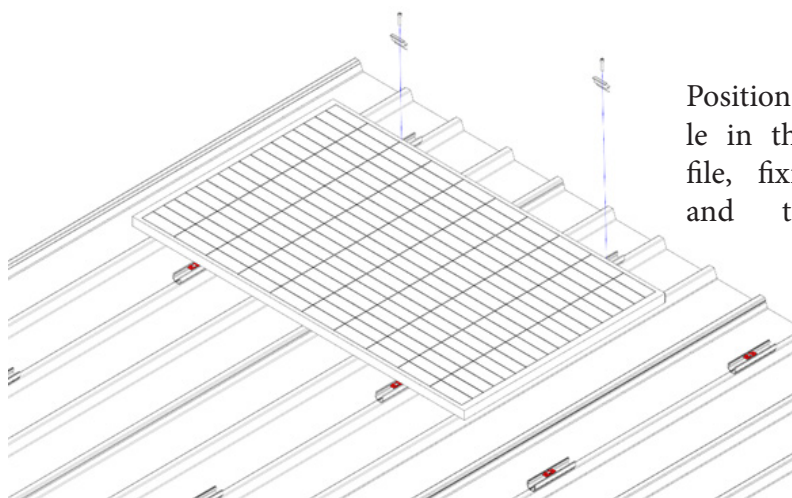
The double sided tape must be totally bonded on the top face, without empty spaces or fixation made in irregular surfaces.

7

Fit the Nut with Plastic Clip in the aluminum profile, rotating to engage the slot.



# Installation Steps



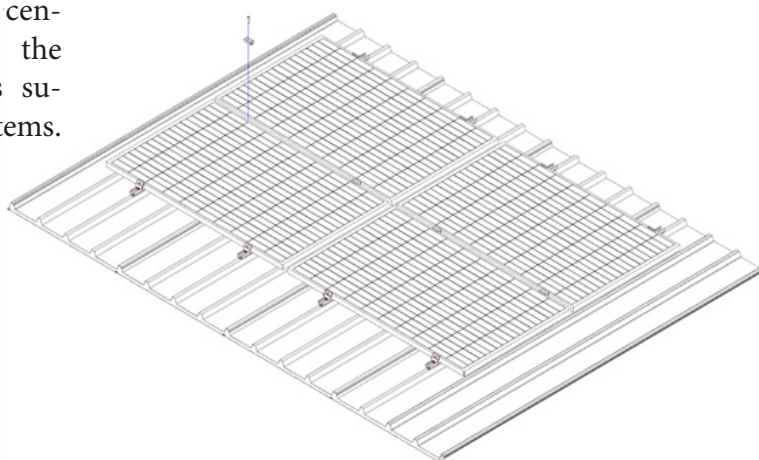
Position the first module in the center of the profile, fixing the End Clamp and tighten the screw.

8

The modules must be installed in a landscape orientation, to ensure a better use of the profile.

9

Position the next module and fix it always in the center of the profile using the Universal Middle clamps supplied by Energy Systems.



10

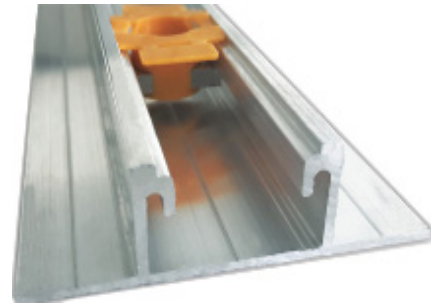
Repeat the process for **all modules**, always keeping the procedure indicated on this Installation Guide.

In case of doubt or any further information, please contact the Energy Systems.

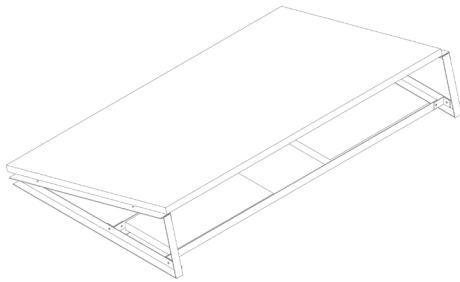
# Other Products



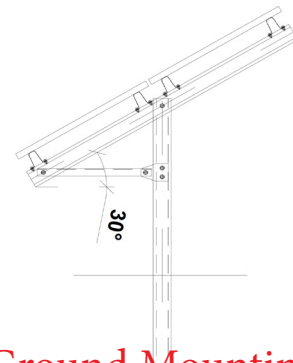
Easy Roof



Easy Plan



Ballast 3M - TPO/PVC  
Membrane



Ground Mounting  
System

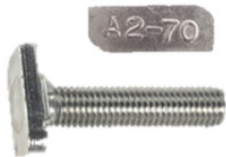


Triângulo / Multiangle  
Aluminium Systems  
1° to 35°

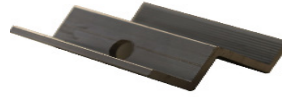


Carport System

# Our Components



T Bolt M8X20 Inox A-2



End Clamp  
Aluminium  
35mm/40mm/45mm



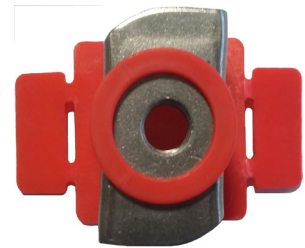
Middle Clamp  
Aluminium



Allen Bolt Din 912 M8  
Inox A-2



Flanged Nuts M8  
Inox A-2



Nuts with Plastic Clip  
M8 Inox A-2



Adjustable Hook  
Inox A-2



Fixing screw with  
double thread  
+ Adapter plate  
Inox A-2



Ground Wire Clip  
(Electrical Protection)