

Data Sheet:**EJOT Solar i-Clip Roof Fixing****Product overview:**

The i-clip mounting bracket offers a complete variable roof mounting solution eliminating frustrations caused by the bracket up-kick being too high. These problems originate from European brackets designed for European roofs and not suitable for UK roofs without making modifications to tiles, battens and rafters etc.

EJOT i-clip Rafter Fix

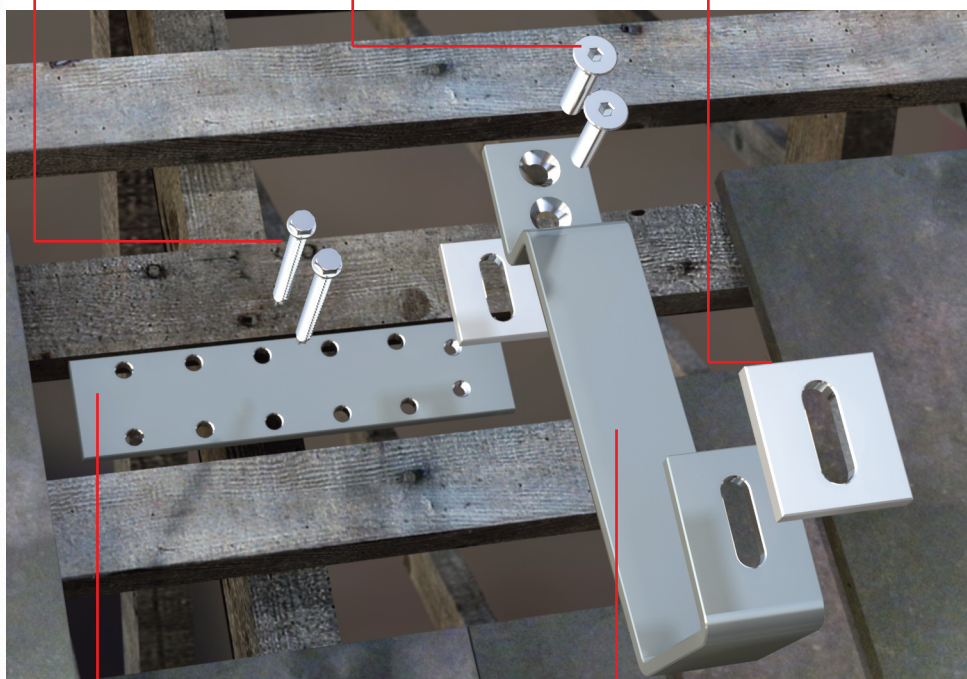
- Bespoke A2 Stainless steel self-drilling fastener
- Eliminates the requirement for pre-drilling the rafter
- Conforms to Eurocode 5
- Can be used in 35mm wide trusses without splitting them

EJOT i-clip Plate Fix

- A2 Stainless Steel
- M8 Metric thread
- 5mm Allen key drive
- 12, 20, 25, 35, 40mm options
- Also supplied in a site case

EJOT i-clip Spacer

- 0 to 4 spacers possible
 - 6mm thick
 - 6061 aluminium
 - Dual use to adjust arm height or rail height.
- L x W x D:
40mm x 40mm x 6mm

**EJOT i-clip Plate**

- 300mm of lateral adjustment
 - Reversible
 - 6mm Stainless Steel
- L x W x D:
190mm x 40mm x 6mm

EJOT i-clip Arm

- Slotted Rail Mount
 - Countersunk ultra slim bolt fixing
 - 6mm Stainless Steel
 - Protective cushion pad between arm and roof
- L x W x D:
220mm x 40mm x 6mm

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EJOT Solar i-Clip adjustments

The Problem:

Initial roof assessment is generally made from ground level. System recommendation includes what is thought to be the required bracket, based on manufacturer data for slate, clay or concrete tiles.

The result is that installers are usually onsite and ready to start when difficulties arise, leaving them to either:

- 'make brackets fit' by cutting too much from the tile – risking compromise to the waterproofing
- go back to supply and exchange them for another type – wasting time and money.
- carry and transport stock of all bracket sizes available – tying up more money and transport

i-clip has been developed with solar installers who have realtime experience. The concept originated as an objective to resolve these problems for an established UK PV installation company by creating a universal fixing system to take to any site, knowing that whatever the roof type or whatever was under the tiles, the bracket would fit. The first i-clip prototype followed two years of extensive development and testing.

The solution:

A modular 'one-bracket / one-stock item', and an instantly adaptable system with little waste that is simple to install. In turn that means a safe installation, a watertight fit and a professional long lasting finish.

The product is made up of three main components; plate, spacer and arm assembled using two

countersunk bolts and fastened by uniquely modified EJOT unique self drilling fasteners that provide a high core diameter to load-strength ratio, eliminating the risk of split rafters.

By stocking a quantity of plates, arms, spacers and bolts, installers can fit to almost any roof – then re-order individual parts as stock requires. This intelligent stock management also helps to keep the carbon foot print of the product low.

Wind Loading:

Wind loadings on solar PV arrays during storm conditions can be extremely large and it is the responsibility of the installation company to get it right – so the entire system must be designed correctly from the outset.

The MCS dictates that all wind loadings should be calculated in accordance with the BRE's recommendations listed in Digest 489 'Wind loads on roof-based photovoltaic systems'.

After extensive testing through Loughborough University and the BRE, it has been shown that by installing vertical rails in addition to horizontal rails to form a framed grid, the

distribution of loads over the entire array are much more uniform, increasing strength and reducing stress on module framework. As a rule of thumb, 2 x i-clip's should be used per m² of solar array, however each installation should be calculated separately, taking into account the location of each building.

Fig 1: Shows lateral adjustment of i-clip

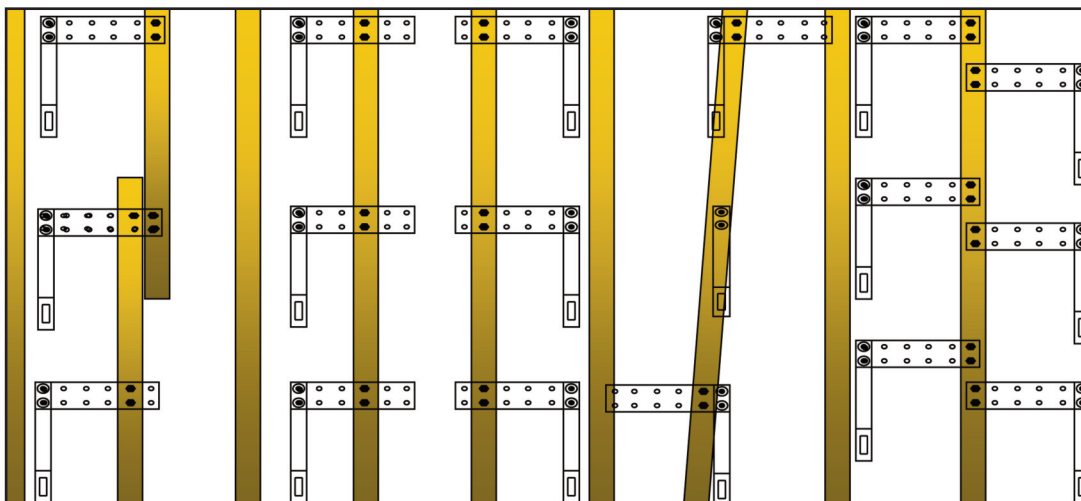


Fig 2: Shows vertical adjustment of i-clip

Undulations (bowed rafters) can be taken out by adjusting the number of spacers fitted to each bracket. The same method of adjusting the spacers can also compensate for different tile and batten thicknesses.

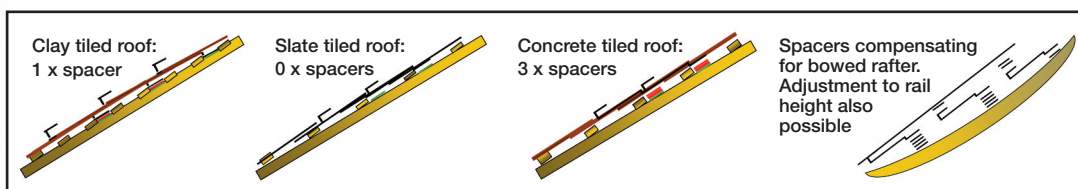


Fig 3: End profile of roof line showing height adjustment of an uneven roof

