

**EJOT® EJOBAR TPO 2G****Best Practice  
and Installation Guide**

The Simple-Fix solution for TPO membrane roofs



# Using EJOT 'EJOBAR TPO 2G' free-standing or fixed in position



For many applications where supporting an item that does not need to be restrained, 'EJOBAR TPO 2G' can be used free-standing. For example, pipework between two fixed points, walkways, plant supports or where an intermediate support is required to maintain a static load above the roofing membrane.

For applications where an item needs to be restrained or secured to an approved TPO membrane, especially where resistance to uplift is required, 'EJOBAR TPO 2G' should be hot air welded by a suitably qualified installer (see below).

If extra fasteners are required a wind load calculation should be carried out to determine the required fixing centres. EJOT can provide this service.



## Simple to use and easy to install

'EJOBAR TPO 2G' can easily be installed to new or existing TPO single ply membrane roofs where approved by the specific membrane manufacturer.

The area that will carry 'EJOBAR TPO 2G' must be fully prepared and cleaned using water and a solvent cleaner specific to the existing roof membrane.

'EJOBAR TPO 2G' can then be easily installed onto the membrane by hot air welding (by a suitably qualified and experienced installer) to the full perimeter of 'EJOBAR TPO 2G' firmly pressing it into place. Use a seam roller to ensure good all-round adhesion to the membrane.

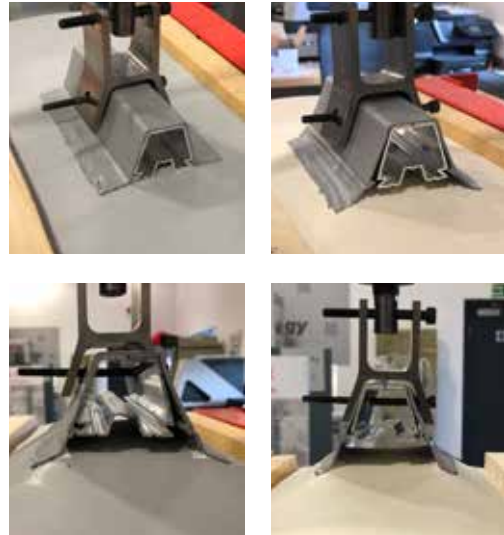


## Strength of weld and pull out performance

'EJOBAR TPO 2G' has been subjected to rigorous strength-of-weld tests at our Applitec Development and Testing Centre. Several TPO membranes were subjected to a like for like schedule of tensometer procedures using a 150mm length 'EJOBAR TPO 2G' achieving an average load of 2.7kN

When on site, always check a sample weld first to ensure that the optimum weld temperature is set.

**NB - 'EJOBAR TPO 2G' is Polypropylene based material, therefore not suitable for Polyethylene Membrane types. Always check membrane composition first.**



## Maximum load point

The performance of 'EJOBAR TPO 2G' in the context of weight is dependent upon the construction of the roof and the compression performance of the insulation, as well as the position of the 'EJOBAR TPO 2G' in relationship to the valley or crowns of any steel or aluminum decking. Where it is fully supported and a uniformly distributed load is created, maximum load should be of 30 kg per/m.

**However, the roof construction must be checked by a structural engineer to ensure that these loadings can be accommodated.**



EJOT's EJOFAST JF3-2-5.5 x 25 S16 Stainless steel Bi-Met fasteners also proved to be a clean efficient method of installing brackets and sections to 'EJOBAR TPO 2G' 2mm aluminium box section.

The fastener's thread geometry displaces metal in contrast to a cutting drill action. Use of this fastener means that a secure installation with a mean pullout average of 3.1 kN can easily be achieved of the fastener from 'EJOBAR TPO 2G'. JF3 is available as either an 8mm A/F hexagon head or with a coloured Colorfast integral Nylon head. It is manufactured from A2 (1.4301) austenitic stainless steel with a hardened carbon steel pierce point.

EJOFAST is also available as a JF6 variant, manufactured from A4 (316) Austenitic Stainless Steel if required for specific applications.



EJOT JF3 comes with European Technical Approval ETA-10/0200.

## 'EJOT EJOBAR TPO 2G'

### Good practice guide for hot air welding to TPO membranes

For TPO membranes, due to different material compositions we recommend a weld strength test is carried out before installation. The sequence below is based on the scenario where extra fixings and a membrane strap may be required. The commentary provides a good practice guide when hot-welding EJOT 'EJOBAR TPO 2G' system to approved TPO membranes.



**1** Accurately measure and mark out the 'EJOBAR TPO 2G' installation area.



**2** Clean surface with appropriate solution as recommended by the membrane manufacturer.



**3** Apply correct fasteners for the application at centres determined by a Wind Load Calculation, if required.



**4** Prepare Compatible membrane cover strap, rounding the ends, 100mm longer than the bar.



**5** Hot-weld the membrane cover strap which should be 180mm in width to seal over the fixing line, taking pressure off the existing membrane.



**6** Hot-weld 'EJOBAR TPO 2G' in the centre of the membrane, directly over the line of fasteners.



**7** How a single 'EJOBAR TPO 2G' looks in position.



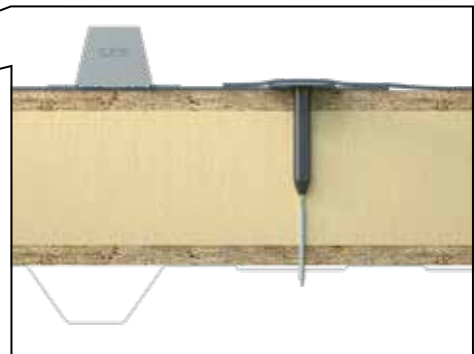
**8** How the completed system will look.

## General requirements for installation of solar and specialist applications

For specialist applications such as solar PV and thermal panels, the construction of the existing roof below the membrane, including the insulation layer needs to be checked. The membrane's suitability for lightweight system installation should be approved by the membrane manufacturer.



- 'EJOBAR TPO 2G' must extend the full length of the panel system.
- A support frame must be fixed on top of 'EJOBAR TPO 2G' prior to panel installation.
- Typically, for the external perimeter and corners, the bars should be positioned at a maximum of 500mm centres, and a maximum of 940mm in the inner field area.
- Only suitable for pitches up to 20 degrees, for pitches above 20 degrees please contact EJOT Technical.
- When 'EJOBAR TPO 2G' is to be installed away from a fixed side lap, a line of additional fasteners suitable for the application must be fixed where 'EJOBAR TPO 2G' is to be positioned and a wind load calculation carried out to determine the required centres of those fasteners.  
A strip of compatible membrane 180mm wide and a minimum of 1.2mm thick, should then be hot air welded over the top of the fasteners for 'EJOBAR TPO 2G' to sit on.  
If the original membrane has been adhered only, then the above procedure must happen with every 'EJOBAR TPO 2G' that is installed.
- The membrane roof needs to be checked by an engineer for suitability for the additional loadings of a solar system.
- 'EJOBAR TPO 2G' needs to be laid in the same direction of the roof fall rather than across the slope to avoid any ponding of rainwater.
- When on site, always undertake a sample weld first to ensure that the optimum weld temperature is set.



'EJOBAR TPO 2G' can be positioned within the field area of the membrane or adjacent and parallel with the seam as shown here. 'EJOBAR TPO 2G' must not be secured above the seam and fixing line or be positioned across the seam.

If the application and the orientation of the bars prevent them from being positioned next to the seam, a 180mm wide, 1.2mm minimum thickness strip of TPO compatible membrane will need to be installed and welded on all sides.

Additional fasteners may be required depending on the results of a wind load calculation and will be essential where the membrane is an adhered system. 'EJOBAR TPO 2G' can then be installed onto this strip.

Please refer to 'General requirements for installation of solar and specialist applications' on the centre pages of this information guide.

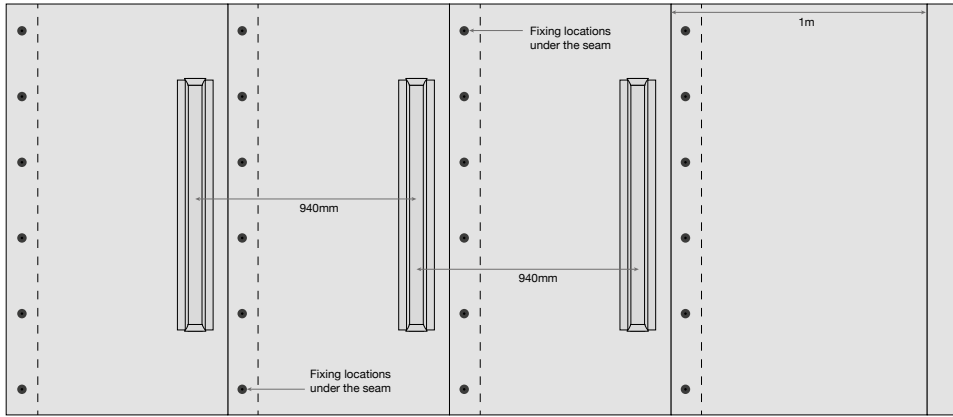


Do not install 'EJOBAR TPO 2G' over the seam, without using an additional membrane cover strip.

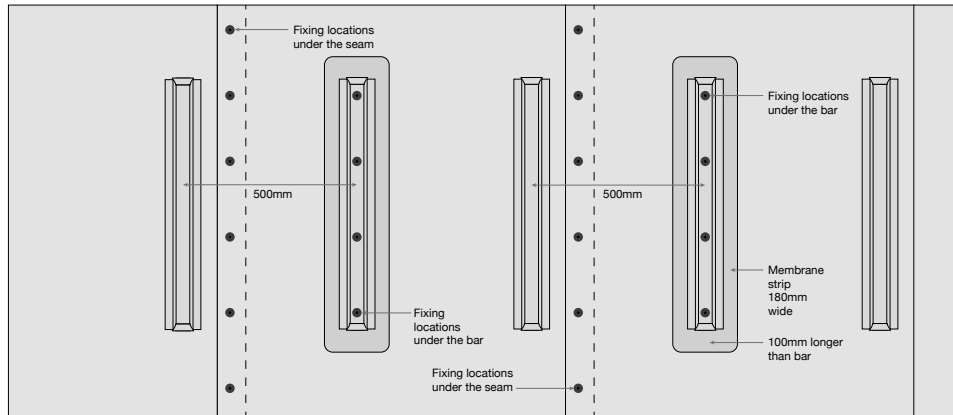


'EJOBAR TPO 2G' positioned correctly over membrane strip.

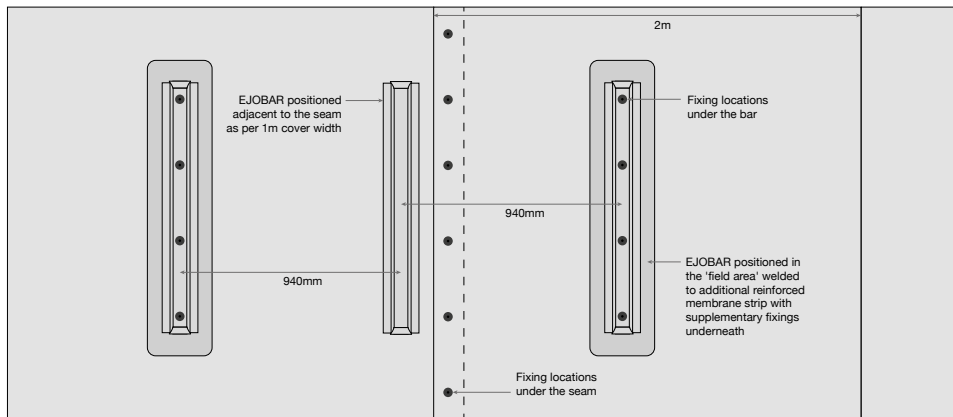
## 1 metre cover width: field area



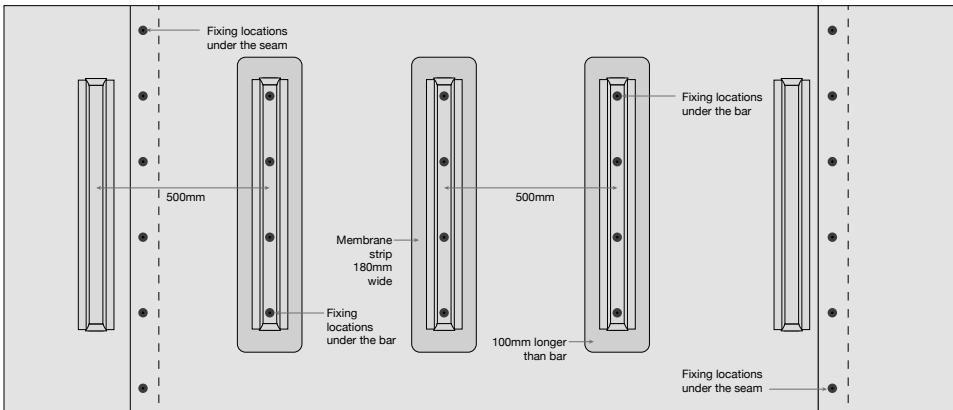
## 1 metre cover width: corner or perimeter areas



## 2 metre cover width: field area



## 2 metre cover width: corner or perimeter areas



Drawings are not to scale

## Available in practical lengths

'EJOBAR TPO 2G' is available in 0.3m or 0.5m lengths for mechanical & electrical applications, and 1.0m or 3.0m for PV solar installations.

Talk to EJOT UK Customer Service or visit the EJOT UK webshop for more details.

### For Mechanical applications use

EJOBAR TPO 2G 300mm

EJOBAR TPO 2G 500mm

### For Solar applications use

EJOBAR TPO 2G 1000mm

EJOBAR TPO 2G 3000mm

