

Fitting Instructions for PV Logic Semi Flexible range STPVF

Temperatures have been breaking records on a frequent basis recently and the data logging systems connected to our test flexi panels at Solar Technology have recorded some extremely high solar panel surface temperatures. In a few cases these readings have gone beyond the temperature tolerance range and in these circumstances solar panel failure is a possibility.

We have replaced under warranty a small number of flexi panels this summer (less than 0.2% of units sold) and on inspection the failure has been a result of separation of an electrical busbar, which almost certainly would have been caused by the high temperatures causing excessive

thermal expansion of the solar panel.

We are currently testing alternative substrates (to aluminium) and have had some promising results with some aerospace fibres and we will report to you in due course once our tests are complete.

In the meantime, an aluminium base is still considered to be the best material by the PV industry for thin laminate solar panel construction (ie PV Logic Flexi) but below is new advice on how to bond the a PV Logic Flexi to a surface to reduce temperatures.

Please discard all previous recommendations on this process and adopt the below. We have tested this method and can confirm, there is no

loss of adhesion to the roof but crucially the panel surface temperature reduces by nearly 10 degrees C, thus keeping the panel safely within tolerance.

NOTE Failure to adopt this advice WILL invalidate the warranty. Where panels are being mechanically fixed to a roof, the following glue pattern should still be used because this process ensures there is an air gap between panel and roof skin. In the circumstances that mechanically fixing is the only form of attachment (ie no glue), please ensure material is inserted between the panel and the roof surface such as insulation foam, to ensure the underside of the panel does not touch the surface of the roof.

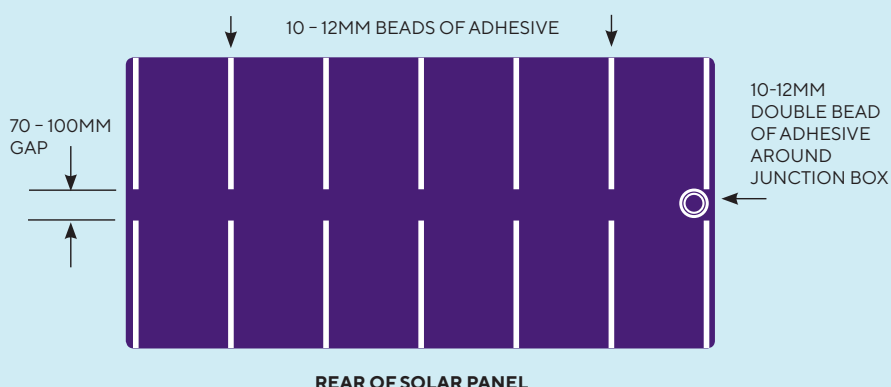
Revised method for installing PV Logic Flexi Solar Panels

(Please note that this does not apply to marine vessels – just land based vehicles and applications)

If fitting a panel to a flat roof, run a 10mm thick bead of adhesive (as per the pattern shown below) at about 150mm to 200mm spacing, leaving a 70 to 100mm gap in the centre of the panel. This allows water to exit and air to travel between the roof and panel. Apply even pressure to the panel to compress the adhesive from 10mm to 5mm.

On a ribbed roof use the same method but apply double lines of adhesive on the peak of each rib, leaving the rib base open.

If the panel has a rear cable exit, apply a circle (or two circles if space permits) around the junction box to ensure the roof hole is well sealed.



GENERAL NOTE

1. Once the panel is fixed to the roof allow the adhesive 24 hours to cure before moving the vehicle.
2. Do not put excessive pressure on the roof when bonding panel to surface – a 10mm bead will be compressed to 5mm. Try to avoid pushing down unevenly, apply gentle pressure across the panel when setting the panel down then leave it to set off.
3. When handling the panel prior to installation please be very careful not to allow the panel to bend. This will be difficult for one person to manage if fitting a large flexi such as 120w or 150w. Therefore, ensure help is at hand. Once fitted the panel is extremely tough but prior to fitting it is vulnerable to cell or busbar breakages in handling. Remember the panel only has 3% flex capability - this is 3cm curve for every metre. If it bends more that this a future problem is guaranteed.