

## General Application Overview of Flexible Modules

The Global Solar Energy PowerFLEX BIPV laminate is an efficient and flexible photovoltaic (PV) module designed to be mounted to various roofing materials with virtually no impact to the roof itself. Using qualified adhesive systems specific to each roof design will ensure the reliability of the module installation.

## Roofing Materials Well Suited to PowerFLEX BIPV Laminate

Numerous types and brands of roofing material have been qualified as suitable substrates for flexible PV mounting, including:

- Modified bitumen
- TPO membrane
- PIB membrane
- PVDF coated metal pans.

Similar materials from different manufacturers may perform differently and each should be tested for good adhesion and long term stability.

\*Contact ADCO for details of application, approved substrates, and recommend adhesives/primers.

## System Components

The PowerFLEX module's back surface is a polyethylene (PE) – Ethylene vinyl acetate (EVA) co-polymer. This material has demonstrated good adhesion to common roofing adhesives. The optional pre-attached butyl mastic adhesive sheet (Adco Corp HelioBond™ PVA 600BT) has been qualified by Global Solar to provide good adhesion to the PowerFLEX backsheets. While other common adhesives may be suitable for specific roofing material/substrate, alternatives should be evaluated for compatibility.

## Assembly

1. It is critical that the system components be assembled in a controlled and consistent process and all materials inspected for suitability – new and unsoiled roofing material is recommended – if it can be freshly unrolled just before the adhesive is applied, best results can be expected.
2. Application of the adhesive to the roofing material should be performed at “room temperature” and with clean and dry materials.
3. Once the PowerFLEX module has been applied to the roofing material, the assembly should be rolled to remove any possible voids.

## How Does Roof Design Affect Installation?

PowerFLEX BIPV modules must be installed over a roof that has verifiable positive drainage per NRCA's (National Roofing Contractors Association\*\*) guidelines. Do not install PowerFLEX BIPV modules near roofing drains, in "crickets", or other low areas of the roof and avoid ponding water. If the roof slope is greater than 5/12, the adhesive system must be supplemented by mechanical fixation.



\*\*See the NRCA Roofing and Water Proofing Manual for guidelines and refer to the waterproofing membrane manufacturer for additional requirements and System Components

## Performance and Reliability

The performance and lifetime of the PV module is meant to create greater efficiency and more energy than other products on the market but both are dependent on roof configuration on which it is installed. Following the few simple, yet critical guidelines presented in this technical sheet will create a highly reliable BIPV system.

## Additional Information

For additional information please reference the documents below:  
TPO sacrificial sheet solution: application number GS11-002  
Electrical system design: application number GS11-003  
PowerFLEX Installation Manual

**\*For adhesives contact Adco Solar**  
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