

Newsletter



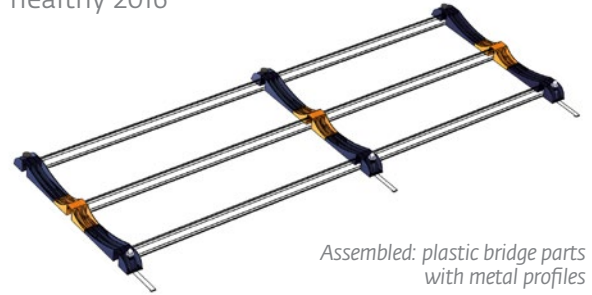
In this issue: Plastic bridge parts for BIPV (Building Integrated PV) – Stylepads; stylish wall panels – BPO wishes you a successful and healthy 2016

Building Integrated PV

Using the roof to generate electricity or heat from solar energy is not at all unusual for some time now. What is relatively new though, is using PV-elements that, next to generating electricity, also form a watertight or closed roof covering system. This specific application is called BIPV (Building Integrated PV).

Mr. Paul Stassen, CEO and founder of TULiPPS Solar BV, saw some years ago that the color, dimensions and shape of PV-panels as an installation product hardly ever match with a building, causing a rather unpleasant appearance. TULiPPS Solar BV believes in buildings with an outer layer completely made of glass, in which the PV system is integrated as a building element. TULiPPS Solar BV works in cooperation with partners in the EU FP7 SUMMIT project and the TKI LiRoB project on the realisation of an esthetically pleasing, watertight PV modular system, a "building skin", with a high power yield, low installation costs and a large variety of shapes and sizes.

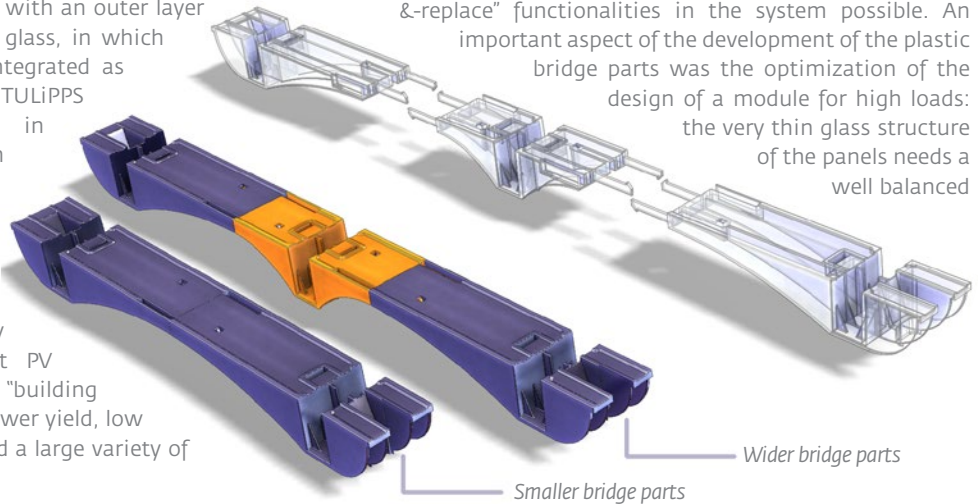
BPO contributed to the development of the mounting system that makes sure that the installation costs can be low and the variety of dimensions can be large. The frameless lightweight system is modular and is connected to the building via an innovative construction on the back that is esthetically invisible. The modules snap together automatically during installation, and they can be



Assembled: plastic bridge parts with metal profiles

replaced individually without special tools. They can be mounted on flat roofs, sloped roofs as well as on straight vertical walls.

BPO's years of experience in the field of plastic product development has made the "click-&-go" and "repair-&-replace" functionalities in the system possible. An important aspect of the development of the plastic bridge parts was the optimization of the design of a module for high loads: the very thin glass structure of the panels needs a well balanced



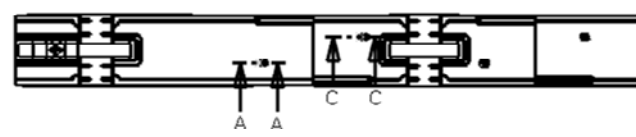
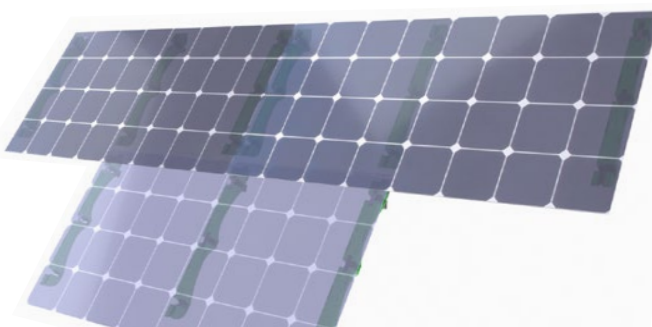
Smaller bridge parts

Wider bridge parts

distribution of forces. The parts of the mounting system have been designed in such a way that every size and type of roof can be used optimally. Finally, everything can be made to measure as required by using fitment parts.

At this point in time the prototypes of the system are being produced and tested. Simultaneously the development of bridge parts for extra large panels that can be used on flat roofs has started. The realization of a fully modular, glass "building skin" is getting nearer and nearer.

For more information on TULiPPS and BIPV, see www.tulipps.com.



2015
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In 2015 BPO has played an essential role in the development of > 100 products for > 80 clients.

BPO has been able to use its knowledge and experience in projects for clients in > 20 countries in Europe, Middle-America, Asia, Australia and Africa.

BPO looks back on 2015 with pride and looks ahead to 2016 with confidence.

On behalf of the whole BPO team we wish you happy Holidays and a successful and healthy

2016



Stylepads

The new Dutch brand "Dock Four" has introduced the home decoration product "Stylepads" to the market this autumn. "Stylepads" are smart and stylish wall panels that can be put together by the consumer any way they wish.

Dock Four: "Stylepads were created based on the vision that there must be a solution for the styling your wall by combining decoration and functionality."

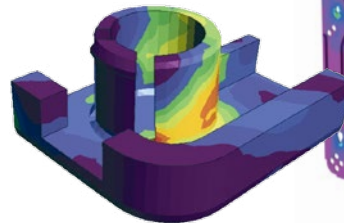
For the decoration part a range of panels can be chosen, for instance wood, metal, leather, photo-print or textiles. The functional part is looked after by practical panels like "postcard holder", "bookshelf" or "mirror".



BPO has contributed to the development of the mounting system, in close cooperation with Dock Four and the producer of the parts, Pekago. The mounting system consists of a back plate, universal connectors and a front plate. BPO has co-developed the geometry of the parts and connections.

The snap fits in the connectors have been optimised in such a way that they can be easily disconnected by the consumer while still able to hold the weight of the heavy "Stylepads" over a very long period of time. Because of the expected loads, the creep behaviour of the selected plastic resin has been taken into account in the finite element analyses.

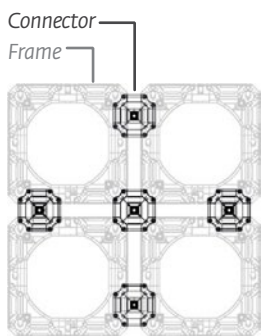
A simple fitting was one of the most essential requirements for the mounting system. This led to the development of one universal connector that is fixed using snap fits. This in turn led to a design where the complete wall panel assembly can be fixed to the wall using only a minimal number of fixation points. The back plates are fixed to each other as much as possible, instead of to the wall. BPO has



Simulation material stress connector snap fit



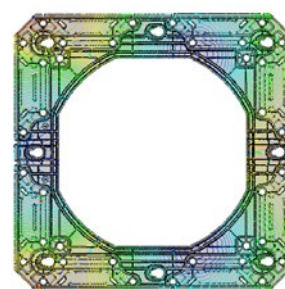
Simulation material stress wall panel assembly



Connector
Frame

simulated the mounting of the system and has optimised the position of the connection in such a way that the "Stylepads" fit seamlessly in their complete assembly.

At a later stage in the development, BPO supported the project using injection moulding



Injection moulding simulation back plate



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