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Sealing and encapsulation solutions for photovoltaic and solar thermal modules

Due to the global trend of greater use of renewable energy sources Sonderhoff, a system supplier for sealing technology, dispensing machines and toll manufacturing for foam gasketing, gluing and potting, will highlight its product solutions for sealing and encapsulation of photovoltaic applications at the industrial fair Hannover Messe 2012. It is also an obvious reference to China as the Partner Country of this year's fair in Hanover as the solar boom in China still prevails.

The Sonderhoff group of companies presents live the foam gasketing application process of a photovoltaic housing inverter with the low pressure mixing and dosing machine **DM 403** from **Sonderhoff Engineering** in Hörbranz, Austria. The two-component foam sealing system **Fermapor K31** from **Sonderhoff Chemicals,** especially designed to fulfill the high demands of photovoltaic applications, is precisely dispensed into the groove of the housing inverter through the dosing nozzle of the **MK 600** mixing head. The mixing head is moved by the powerful three-axis linear robot system **LR HE plus** of the dispensing machine DM 403 with complete contour accuracy of the part. After curing of the material in the groove a smooth and room temperature crosslinking polyurethane foam sealing is formed for optimal protection of the technical inner life of the inverter housing. [image_0]

Apart from foam sealing of photovoltaic parts like inverter housings the three-component mixing and dosing machine DM 403 is also to be used for various other applications in this field, like for example gluing of solar thermal energy modules or encapsulation of photovoltaic junction boxes.

The system supplier Sonderhoff provides its customers patented knowledge and the experience from a wide variety of realised applications such as automotive, ventilation and air-conditioning, lighting, electronics, switch cabinets, packaging or household appliances. The two-component polyurethane-based foam gasket systems Fermapor K31 are used for the safe sealing of many different parts and complex geometries from these industries.

According to the company, the Fermapor K31 sealing solution ensures optimal protection of the modules and components for photovoltaic and solar thermal energy. After their installation they need to be leak-proof for failure-free functioning. In particular electrical and electronic devices inside such modules like a photovoltaic inverter developed for grid connected solar power systems need to work precisely and reliable for many years even under heavy-duty environment.

Essential requirements for the sealing of photovoltaic inverter housings are the fulfillment of the valid IP-classification against water, dust and other aggressive substances as well to resist high temperatures. The Fermapor K31 systems fully comply with it and keep humidity, dust and other harmful environmental influences out. Despite intensive solar radiation and high temperatures the applied sealing products from Sonderhoff maintain their good mechanical properties, says the company.

In addition to foam gaskets Sonderhoff also offers potting solution to the photovoltaic and solar industry. For instance, junction boxes for the electrification of photovoltaic facilities are encapsulated with the two-component silicone-based potting material from Sonderhoff to protect the inside from weather factors. This potting system from the **Fermasil** product family fulfills the requirements for photovoltaic components concerning optimal resistance against high temperature and UV radiation as well as compliance with the IP 67 protection rating (IP = Ingress Protection).

In the field of solar thermal energy the gluing of solar glass and aluminium bottom plates with one- or two-component silicone is a typical application as well as the gluing of plastic corners with two-component polyurethane adhesives from Sonderhoff. All these material systems can be exactly processed with the dispensing machine DM 403.

Shortly before the Hanover Industrial Fair the Sonderhoff group of companies also exhibits its portfolio at the Chinaplas in Shanghai for the fourth time. Close to this economic hotspot Sonderhoff operates its own company – **Sonderhoff (Suzhou) Sealing Systems Co. Ltd.** It has firmly established as a supplier of low pressure dispensing machines as well as polyurethane- and silicone-based sealing, gluing and potting material in the Chinese market. Its toll manufacturing for foam gasketing, gluing and potting enables the customers to use it as an "extended workbench" for sampling and test runs of sealing applications on prototypes and structural components without interfering with their own on-going production.

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