

Oerlikon Solar Utilizes *Dow Corning*® PV-8301 Fast Cure Sealant for New Module Mounting Interface Application

Case Study: Oerlikon Solar



Photo courtesy of Oerlikon Solar

CUSTOMER

Oerlikon Solar

LOCATION

Trubbach, Switzerland

PROBLEM

Oerlikon Solar was searching for a suitable adhesive for their Module Mounting Interface (MMI) – a new mounting solution for glass/glass thin film modules.

PRODUCT SELECTED

Dow Corning® PV-8301
Fast Cure Sealant

RESULTS

Oerlikon Solar chose *Dow Corning*® PV-8301 Fast Cure Sealant to bond the MMI pads to modules because of its cost, performance and application advantages, as well as Dow Corning's excellent technical support.

Oerlikon Solar, a manufacturer of field-proven equipment and end-to-end manufacturing lines for the mass production of thin film silicon solar modules, recently developed a new mounting solution that uses bonded pads instead of clamps or rails. This new technical solution was chosen because it significantly reduces costs for the mounting material and final installation and therefore helps to reduce the total system cost.

To implement the MMI concept the company selected the *OptiBond*® pads from Schletter GmbH, a German-based company that designs and manufactures rooftop and ground mounted PV systems for commercial and utility-scale installations. Yet there was a bonding interface missing between the module and the MMI pad. A structural adhesive to securely bond the pads to the module's glass backface had to be selected.

This is when Oerlikon Solar called upon Dow Corning Solar Solutions' extensive silicone adhesive experience to help to resolve its mounting problem. Dow Corning provided a two-part structural adhesive, *Dow Corning*® PV-8301 Fast Cure Sealant, fulfilling all the adhesive properties needed, providing greater ease of installation, reducing costs and minimizing risk of damage to the glass/glass modules.

"PV-8301 Fast Cure Sealant was exactly what we were looking for when we decided to use MMI instead of clamps or rails. Dow Corning not only supplied an excellent product but provided excellent technical support as well. We truly appreciate the time and resources Dow Corning spent collaborating with us on our MMI Project."

JÜRGEN DILLMANN
OERLIKON SOLAR
PV PRODUCT ENGINEER

Oerlikon Solar also chose this adhesive because of its long-term durability, which exceeds IEC standards. It also meets aging conditions according to the European construction industry standard, ETAG 0002. The MMI system using *Dow Corning*® PV-8301 adhesive has been successfully certified according to IEC 61646 by TÜV Rheinland in Germany, which is key to most of Oerlikon Solar's customers.

Prior to the introduction of the MMI system using *Dow Corning*[®] PV-8301, some of Oerlikon Solar's customers were clamping the modules to rails. Clamping, besides the high material cost, also adds reliability risks, especially potential damage to the module's surface from an over-tightened clamp. Oerlikon Solar's new mounting system is a superb solution for the company's thin film modules because it eliminates the risk of damage, plus allows a much faster installation of the thin film modules.

"PV-8301 Fast Cure Sealant was exactly what we were looking for when we developed the MMI solution as a substitute for clamps and rails," said Jürgen Dillmann, PV Product Engineer at Oerlikon Solar. "Dow Corning not only supplied an excellent product but provided excellent technical support as well. We truly appreciate the time and resources Dow Corning spent collaborating with us on our MMI Project."

Dow Corning's full testing capabilities and technical support were also important to Oerlikon Solar's qualification of *Dow Corning*[®] PV-8301. "Dow Corning worked with A. Hagl Ingenieuresellschaft mbH to provide Oerlikon Solar with comprehensive computer simulations and finite element analysis (FEA)," said Dr. Jörg Kersten, business development at Dow Corning's office in Germany. "The information the institute provided was critical to helping us and Oerlikon Solar understand the load and forces the silicone would have to absorb. It also helped Oerlikon Solar specify the exact dimensions the MMI pads needed.

"While bonding is still new to the PV industry, Dow Corning seems to be ahead of the curve with its proven solution for a completely new mounting system. In addition, all this testing, as well as the certification by TÜV, truly validates the viability of the company's silicone products and the company's commitment to the solar industry."

THE ADVANTAGES OF *DOW CORNING*[®] PV-8301 FAST CURE SEALANT

- Adhesion to typical PV substrates
- Fast cure allowing increased production rates
- Good adhesion in hot and humid temperatures
- Two-part product providing a customized cure rate
- Long-term bonding and protection against moisture, vibration, environmental degradation and mechanical and thermal shock where cure speed is critical
- Suitable for room-temperature curing
- Excellent technical support

LEARN MORE

Dow Corning has sales offices and manufacturing sites, as well as science and technology laboratories, around the globe. For more information, please visit dowcorning.com/solar or e-mail solar.solutions@dowcorning.com.

Images: Front: AV11652, AV11171

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