Warranty for Longevity: PLEXIGLAS® Fresnel lenses for concentrating photovoltaics (CPV) qualified

- Evonik and Concentrator Optics guarantee light transmission of solar PMMA lenses for at least 20 years.

In a cooperation designed to push the large-scale deployment of concentrating photovoltaics (CPV), PMMA producer Evonik Röhm GmbH, a subsidiary of Evonik Industries and Fresnel lens manufacturer Concentrator Optics GmbH guarantee the transmission of PMMA for at least 20 years.

CPV has the highest conversion efficiency of all solar technologies. Sunlight is concentrated by optical elements onto high-efficiency multi-junction cells. The optical elements are often lenses, arranged in monolithic parquets (see attached photo).

“The bankability of CPV projects depends on the kind of long-term performance guaranty that manufacturers can extend to their customers”, notes Dr Ralf Leutz, CEO of Concentrator Optics. “With a 20-year warranty on lenses made from PMMA, banks and investors find it much easier to finance CPV. The market should gain huge confidence in this new technology.”

Evonik has developed a PMMA specialty suitable for the demands of outdoor CPV applications, as a version of the well-known PLEXIGLAS®. This new PLEXIGLAS® Solar provides transmission properties especially adjusted to the spectral response and requirements of solar cells. Concentrator Optics mass-produces lens parquets based on extruded sheets of PLEXIGLAS® Solar 0Z023 in a qualified process.
Press release

The material has been proven in accelerated aging testing series, thus making it possible to offer such a warranty.

Both companies state that module makers and project investors in CPV can feel confident about the materials for the solar future. The 20-year warranty on transparency for Concentrator Optics PMMA lenses made from PLEXIGLAS® Solar sheets is an industry first.

Capture: Concentrator Optics’ off-the-shelf Fresnel lens parquet uses Evonik’s PMMA product PLEXIGLAS® Solar.
Photo: Concentrator Optics GmbH, Cölbe, Germany

Photo is available for downloading at www.plexiglas.net and www.plexiglas-polymers.com

The Performance Polymers Business Unit of Evonik Industries is a worldwide manufacturer of PMMA products sold under the PLEXIGLAS® trademark on the European, Asian, African and Australian continents and under the trademark ACRYLITE® in the Americas.
Concentrator Optics GmbH

Concentrator Optics of Cölbe, Germany, is a recognized technology leader in design and manufacturing of Fresnel lens parquets for solar concentrating photovoltaics (CPV). Concentrating photovoltaics offers highest efficiency (30%) solar power generation.

Concentrator Optics has generated unique technologies, in particular in the areas of materials and processes in the manufacture of Fresnel lenses, and in the tooling processes upstream of the lens fabrication. Concentrator Optics is the only company worldwide capable of making Fresnel lens parquets in both PMMA and silicone–on–glass (SOG) in large areas up to 1300x1250 mm². Concentrator Optics create monolithic tools, and ensure that all lens parquets are manufactured with tolerances based on this one original parquet tool.

Concentrator Optics GmbH is the one–stop solution for optics in concentrating photovoltaics, offering optical design, mass manufacturing, and production lines. For very large volumes and fast ramp–up, Concentrator Optics will partner with its customers, transfer its expertise, and integrate its automated production lines into CPV module assembly processes.

Fresnel lens production is a bottleneck technology. Concentrator Optics is venture capital–funded, actively seeking funds for its worldwide expansion plans.

Evonik Industries

The Acrylic Polymers Business Line of Evonik Industries manufactures the inspiring plastic PLEXIGLAS® and offers a wide range of specialty molding compounds and sheet products for a variety of future–oriented applications. PLEXIGLAS® is used wherever the most stringent demands are to be met in terms of function and design.

Major markets for PLEXIGLAS® are for example electronics and communication, solar applications, the automotive and aviation industries, architecture and the construction and the lighting industry.
About Evonik
Evonik is the creative industrial group from Germany. In our core business of specialty chemicals, we are a global leader. In addition, it has energy and residential real estate operations. Our performance is shaped by creativity, specialization, reliability and continuous self-renewal.

Evonik is active in over 100 countries around the world. In fiscal 2010 more than 34,000 employees generated sales of around €13.3 billion and an operating profit (EBITDA) of about €2.4 billion.

Disclaimer
In so far as forecasts or expectations are expressed in this press release or where our statements concern the future, these forecasts, expectations or statements may involve known or unknown risks and uncertainties. Actual results or developments may vary, depending on changes in the operating environment. Neither Evonik Industries AG nor its group companies assume an obligation to update the forecasts, expectations or statements contained in this release.