

Optical components with a lower carbon footprint

BWF Profiles uses ACRYLITE® proTerra M5 containing recycled material for high-quality optical components in luminaires

- BWF Profiles produces optical components for a concept study on the newly launched RIDI LINIA EVO continuous-row lighting system with a lower carbon footprint
- ACRYLITE® proTerra M5 from Röhm, containing up to 30 percent recycled PMMA, impresses with its optical purity
- Recyclable material for resource-efficient luminaire manufacturing

Sustainable luminaire design is a multifaceted standard which can be broken down to the manufacturing process of every single luminaire. Although the use of recycled material is a resource-efficient option, it reaches its limits for lenses and light covers as these require recycled materials with flawless optical properties. One such material is ACRYLITE® proTerra M5, a molding compound from Röhm containing recycled polymethyl methacrylate (PMMA).

By making an optical component for the lighting manufacturer RIDI using this material, BWF Profiles, a leading manufacturer of high-quality plastic profiles for the lighting industry, has proven that it is practical for parts such as this. BWF Profiles uses ACRYLITE® proTerra M5 to produce a continuous-row lighting system for a concept study on the RIDI LINIA EVO system, which was presented at the leading trade fair Light+ Building 2024 as an example of sustainability.

Sustainable molding compound with recycled material

“Our ACRYLITE® proTerra M5 molding compound contains up to 30 percent mechanically recycled PMMA from post-industrial sources, which is mixed with new ACRYLITE® in a controlled manner. This reduces the material’s carbon footprint by 30 percent compared to new material,” explains Christian Bitsch, Senior Market Tech Consulting Manager in the Molding Compounds business unit at Röhm GmbH.

Decision in favor of the circular economy

Lighting manufacturers and their suppliers strive to produce in an environmentally and climate-friendly manner, as sustainability has become an established market demand. “At BWF Profiles, the processed materials alone account for nearly 80 percent of the company’s carbon footprint,” says Nico Sonntag, Materials Development Engineer at BWF Profiles. That’s why the company places such a lot of value on using resource-efficient materials and handling them sparingly – for example, by wasting as little material as possible when starting the extruder and by returning production waste directly to the internal recycling process.

Florian Bisle, Director Innovation & Development at BWF Profiles, adds: “We had discussed possible approaches for the sustainable production of light covers. We rejected the option of procuring mass-balanced material, and instead devised a solution based on a direct circular economy, which meant that we had to test various recompounded materials.” In this case, this refers to reprocessed materials containing post-industrial recycled material.

“ACRYLITE® proTerra M5 impressed us with its optical purity”

“The prerequisite was that we obtained recycled materials without any inclusions or unwanted black specks. ACRYLITE® proTerra M5 convinced us with its high purity,” says Bisle. The high-quality PMMA plastic provides ideal conditions for the circular economy

Darmstadt, April 24, 2024

Press contact:

Thomas Kern
Global Communications
Molding Compounds

Deutsche-Telekom-Allee 9
64295 Darmstadt
Germany
T +49 6151 863-7154
thomas.kern@roehm.com

Marc Tracey
Communications Lead, Americas

Roehm America LLC
8 Campus Drive
Suite 450
Parsippany, NJ 07054
USA

M +1 862 337 1270
marc.tracey@roehm.com

www.acrylite-polymers.com

Roehm America LLC
8 Campus Drive
Suite 450
Parsippany, NJ 07054
USA
www.roehm.com

because it can be completely recycled time and again while maintaining virtually identical material properties. Its exceptional optical properties are also retained.

“We need a reliable partner that can guarantee consistently high quality. In this respect, we are in good hands with Röhm,” Bisle emphasizes. “We share a partnership that goes back many years. Many decades ago, BWF Profiles was the first company that processed ACRYLITE® molding compounds in its extrusion business. And even today we relish being a pioneer for new projects with the new and sustainable ACRYLITE® *proTerra*.”

Coextruded profile with tailored properties

The optical components for the concept study on the RIDI LINIA EVO continuous-row lighting system contain around 78 percent ACRYLITE® *proTerra* M5. In order to achieve the light and production-related properties that RIDI was looking for, BWF Profiles coextruded the 60-millimeter-wide profile with two PMMA products from Röhm: The centrally positioned TIR lens consists entirely of ACRYLITE® *proTerra* M5. As with other crystal-clear ACRYLITE® molding compounds, it possesses exceptionally high light transmission with virtually no absorption of visible light in the material. The profile base, the crosspieces which hold the circuit board in place and the lateral snap-in hooks must withstand high mechanical stresses. Therefore, ACRYLITE® Resist with a higher impact resistance is added to the ACRYLITE® *proTerra* M5 used in this segment.

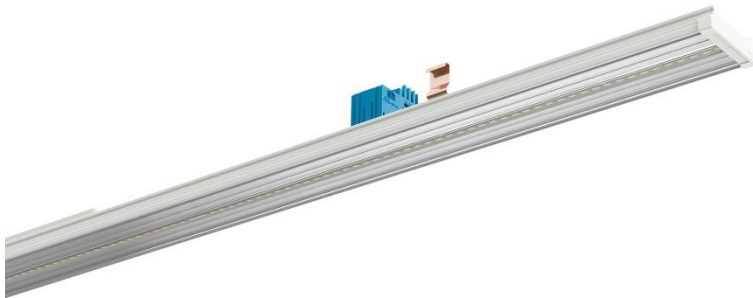
Strong partnership for innovative, sustainable lighting technology

The optical quality also impressed the CEO of RIDI Leuchten GmbH, Manfred Diez, and Product Manager Edwin Baran: “The optical components with recycled material meet our stringent quality demands for a sustainable lighting solution. In collaboration with BWF Profiles, our aim is always to produce as sustainably as possible with the highest degree of energy efficiency. Starting from the very first discussions, we focus on designing products that meet the demands of the circular economy.”

[Images]

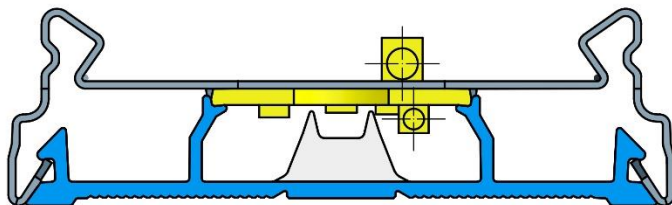


At the Light + Building 2024 trade fair, RIDI Leuchten presented a concept study for the RIDI LINIA EVO continuous-row lighting system as an example of sustainability in light manufacturing. ACRYLITE® *proTerra* M5 also plays its part in this: Röhm’s molding compound contains recycled PMMA, while its high optical clarity makes it ideal for lenses and light covers.



© RIDI Leuchten GmbH

Concept study for the RIDI LINIA EVO continuous-row lighting system. BWF Profiles produced the optical components using **ACRYLITE® proTerra M5** from Röhm. This especially sustainable molding compound contains around 30 percent recycled PMMA.



© BWF Profiles

Cross-sectional drawing of the luminaire profile: The centrally positioned TIR lens (light gray) consists entirely of **ACRYLITE® proTerra M5**. The profile base, the crosspieces and the lateral snap-in hooks contain additional **ACRYLITE® Resist** with a higher impact resistance, as these areas are subjected to higher mechanical stresses.

...

About Röhm

With 3,500 employees and 13 production sites worldwide, Röhm is one of the leading manufacturers in the methacrylate business. The medium-sized company with branches in Germany, China, the USA, Mexico, and South Africa has 90 years of experience in methacrylate chemistry and a strong technology platform. Our best-known brands include **PLEXIGLAS®**, **ACRYLITE®**, **MERACRYL®**, **DEGALAN®**, **DEGAROUTE®** and **CYROLITE®**.

Polymethyl methacrylate (PMMA) products from Röhm are sold in the Americas under the registered trademarks **ACRYLITE®** and **ACRYMID®**, on the European, Asian, African and Australian continent under the registered trademarks **PLEXIGLAS®** and **PLEXIMID®**.

More information is available at www.roehm.com.