

Press Release



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Covestro AG
Communications
51365 Leverkusen,
Germany

Contact
Dr. Frank Rothbarth
Telephone
+49 214 6009 2536
E-mail
frank.rothbarth
@covestro.com

Demonstrator for highly integrated wallbox

Improved sustainability in combination with freedom of design and functionality

- **CO₂ savings even during the production of the charging station**
- **Polycarbonate from mass-balanced biowaste and residues meets all technical requirements**
- **More sustainable and economical manufacturing**

[Covestro](#), LEONHARD KURZ and Sumitomo (SHI) Demag will present a new concept for a wallbox for charging electric vehicles at the [K 2022](#) plastics trade fair in Düsseldorf. The smart demonstrator combines great freedom of design and high functionality with more sustainable manufacturing in terms of both materials and processes. It visualizes sustainable charging with green electricity and its design embraces “vehicle-to-grid” concepts, i.e. using the vehicle battery as a buffer store that releases electricity into the public grid to compensate for power fluctuations. "With this concept, we want to show that a contribution to sustainability, CO₂ savings, and green mobility can already be made in the production stage of such charging stations," explains Dr. Niklas Meine, head of the global project EV Charging Stations and Marketing Electrical Engineering and Electronics in the EMEA region at Covestro.

Lower carbon footprint, flame retardant, and recyclable

A polycarbonate (PC) compound from the new Makrolon[®] RE product range and PC films from the Makrofol[®] range are used in the manufacture of the demonstrator. Makrolon[®] RE and Makrofol[®] DE MB are polycarbonates and polycarbonate films, respectively, with a very low carbon footprint. They consist proportionately of raw materials derived from biowaste and residues, and are produced partly using renewable electricity. The sustainable origin of the raw materials is certified according to ISCC Plus (International Sustainability and Carbon Certification) and mass balanced.



"The RE compounds and films used for the charging station therefore have a very low carbon footprint. At the same time, they are suitable for backlighting as well as for various design technologies and meet the strict technical requirements for charging stations," Meine explains. For example, Makrolon® RE is particularly flame-retardant and achieves a good 5VA rating (Yellow Card) in the UL 94 fire test conducted by the U.S. testing company Underwriters Laboratories Inc. (UL). It is also UL f1 listed and can therefore be used outdoors under water and UV exposure.

Energy efficient manufacturing

The demonstrator is manufactured using a combined Film Insert Molding (FIM) and InMold Decoration (IMD) process, for which Sumitomo (SHI) Demag has developed a customized plant technology. The injection molding and back molding of the decorative foils can be combined in a single process step. As a result, production can be carried out not only in short, economical cycle times, but above all in an energy-efficient manner.

Customized design

In the combined process, Makrolon® RE and Makrofol® allow for great freedom in the design of the wallbox, which is equipped, among other things, with an integrated display with touch functions. For example, seamless, large-area and glass-like surfaces in various colors can be implemented using just one tool. The capacitive and backlightable touch sensors from KURZ subsidiary PolyIC can be easily integrated behind the wallbox surface made of polycarbonate. With them, for example, the charging of the battery can be controlled steplessly by touching the control panel with a finger. In addition, the PC materials are well suited for the PMD (Print Mold Design) technology, which KURZ subsidiary Burg Design has optimized for the application of logos, for example.

"Overall, the numerous design options allow for the customized design of the charging stations under economic conditions," sums up Martin Hahn, Head of Application, Technology & Innovation of the Plastic Decoration business area at KURZ. The focus lies on a very broad use of different decoration methods and also their combination, so that, for example, partial metallization can also be implemented on the design ring using hot stamping technology. "With the Wallbox Design Demonstrator, we illustrate customer-specific solutions in the overall context of design, material and process technologies," adds Hahn.

Experience the demonstrator at K 2022

At K 2022, Sumitomo (SHI) Demag will produce the demonstrator live via IMD technology at its own booth D22 in Hall 15. The new wallbox concept is also a key topic for KURZ at its booth A19 in Hall 5. The focus is on the numerous



design options that arise from the use of a wide variety of decorative technologies. Visitors can also use an augmented reality (AR) app to design the demonstrator themselves and thus get a closer look at the technologies. Covestro will also exhibit the demonstrator and AR app at its booth A75 (Hall 6) along with material and component solutions for IoT applications, electromobility and electrification. In addition, the innovative wallbox concept will be the subject of a joint presentation at the booth of Covestro on October 20th, 2022, at 11 am.

About Covestro:

Covestro is one of the world's leading manufacturers of high-quality plastics and their components. With its innovative products and processes, the company contributes to greater sustainability and quality of life in many areas. Covestro supplies customers around the globe in key industries such as mobility, construction and housing, and electrical and electronics. In addition, Covestro's polymers are used in areas such as sports and leisure, cosmetics, healthcare and in the chemical industry itself.

The company is fully aligned with the Circular Economy and aims to become carbon neutral by 2035 (Scope 1 and 2). In the 2021 fiscal year, Covestro generated sales of €15.9 billion. As of the end of 2021, the company produced at 50 sites worldwide and employed around 17,900 people (converted to full-time positions).

Notes to editors:

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