Future of automotive mobility

IMD PUR – the pioneering dual technology for highly efficient production

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Our attractiveness formula for autonomous driving: IMD PUR

What will automobility of the future look like? How attractive can autonomous driving and e-mobility be while at the same time making high demands on materials? KURZ gives you groundbreaking answers to the future of automotive surface decoration with a world first that combines the best of both worlds in one production step: IMD PUR. Efficiently create aerodynamic, smooth and self-healing surfaces that support radar and LiDAR functions and are unmistakable in design. Go your own way with regard to your autonomous design freedom with radiolucency, color brilliance and 3D effects – with KURZ as an innovative partner and competent solution provider.
Benefit from comprehensive KURZ solution competence with IMD PUR:

- As a specialist in thin-film and process technology, KURZ develops IMD coatings that enable the PUR topcoat to adhere perfectly.

- KURZ subsidiary SCHÖFER, as a manufacturer of injection molding tools, complements KURZ’s comprehensive know-how with high-tech tools that are precisely adapted to the IMD PUR process.

- KURZ subsidiary BURG DESIGN opens up enormous scope for design with PMD single sheets, which can also be processed with IMD PUR in addition to roll-to-roll. For new designs with a fascinating depth effect.

Your benefits:

**For highest adhesion:**
KURZ IMD decoration – designed for highest adhesion in layered compound

**For the future:**
Radiator grille – crystalline groundbreaking designs for autonomous drive technologies

**For long-term use:**
High gloss depth design with self-healing surface

**For series production:**
Precise high tech technology developed for efficient series production
Schöfer GmbH, located in Schwertberg (Austria), is a mold manufacturer and a producer of highly specialized plastic components meeting highest standards of precision as well as optical and functional capability. Our company is well known as one of the true pioneers in the fields of Polyurethane In-Mold Coating (PUR IMC), Film-Insert Molding (FIM) technologies and process combinations thereof. In the course of this phase we developed several ready for production IMC-concepts to specifically serve our customers needs with respect to production quantity, way of part decoration (FIM, IMD) or surface texturing.

It is worth emphasizing our three decades long experience and know-how in mold making and plastics manufacturing with a strong focus on the automotive sector, both interior and exterior applications. This enables us to greatly support our customers with tailor-made solutions for serial production ranging from engineering services, mold manufacturing up to the production of injection molded parts.

BURG DESIGN is a production company with a strong focus on design and is a tier 1 original equipment manufacturer for the automobile industry. BURG DESIGN produces interior and exterior components such as cockpit and door parts, side moldings and mirror cover trims using various foil technologies and in special design variants. We possess not only a deep pool of creativity and design talent, but also the production processes needed to bring them to life – a true melding of design and production into one shared universe.

For IMD PUR, BURG DESIGN develops surface designs that can be processed as individual PMD sheets. These sheets are preformed and decorated using silk-screen printing, then individually placed into the mold, fused to the part during the injection molding process and finally flooded with PUR. The silk-screen printing technique and the double-sided printing of the PMD sheets allows BURG DESIGN to generate a unique 3D look. When combined with the IMD PUR depth effect, the resulting designs boast incomparable spatial effects.
Fit for the requirements of the automotive future: ENGEL combines new functionalities with the highest design demands in injection moulding

The core of the integrated production cell is an ENGEL duo 900 injection moulding machine designed for the gentle processing of polycarbonate. In a sliding table mould, the IMD foils are first back-injected with polycarbonate and the surface of the component is immediately flooded with polyurethane. The entire process is controlled by the powerful CC300 injection moulding machine control system. All relevant process parameters are documented shot for shot. For long-term and complete traceability, the system is integrated into the MES authentig from TIG.

The production cell is completely automated. The iQ flow control software developed by ENGEL and the e-flomo electronic temperature control water manifold ensure dynamically controlled and stable mould temperature control process.

As one of the leading companies in plastics machinery, ENGEL develops customised injection moulding solutions. Innovation and technological leadership give ENGEL’s customers the decisive competitive edge.

High-pressure metering machines for the production of transparent and highly resistant polyurethane coatings for functional and decorative parts

Efficient surface finishing using transparent polyurethane systems is a proven application area for Hennecke’s PUR metering machines. The combined IMD PUR process uses the STREAMLINE MK2, a customized processing system for the high-pressure metering of polyurethane in RIM processes. The space-saving high-pressure metering machines come equipped with comprehensive standard features including a self-cleaning high-pressure mixhead and an intuitive machine control system with a wireless touchscreen operator panel. A specially developed interface supports the easy integration of the STREAMLINE MK2 system into the plant control system of the injection moulding machine. Thanks to an efficient and reliable heating system for tanks and pumps using tried and tested hot air technology, the STREAMLINE MK2 ensures effective heating of the PU system components and provides excellent mixing results, even for low outputs.

www.engelglobal.com

LEXAN™ Resin for Front Panels

For new designs of the front of the vehicle, look no further than one of the toughest and most versatile of all engineering thermoplastics – LEXAN™ LS polycarbonate resins.

These materials make it possible to bring your visionary ideas to life. The resins allow for the integration of RADAR and LiDAR sensors and lighting functions – enabling the future of vehicle design, e-mobility and autonomous driving. Long used for transparent exterior trim and lighting, LEXAN LS resins are easy to work with and offer key advantages for front panel applications.

· Distinctive styling and 3D surface aesthetics
· Excellent weathering characteristics
· High ductility and stiffness to meet safety requirements
· High near-field infrared transparency for integrating LiDAR
· High RADAR transparency for ADAS technologies
· Highest scratch resistance through coating technologies

A world leader in thermoplastic materials for automotive, SABIC’s experts are ready to collaborate with you on front panel designs.

Email us at: automotivesolutions@sabic.com

For demanding surfaces with maximum design freedom

PURIFLOW® – the most universal system of RIM One-Shot technology

With years of research, PURIFLOW® has been used to develop a coating system that has been exclusively tailored to RIM One-Shot technology. As a pioneer in this field, we have successfully designed a system with extreme variability to address the most diverse requirements in series production.

Essential features include:
· Outstanding adhesion properties for different films and substrates
· Excellent mechanical and chemical resistance
· Extreme heat stability
· Strong UV protection
· Self-healing effect
· Tremendous variability in reaction times
· Suitable for large components and complex component geometries
· Versatility for hard, soft, colored or transparent surfaces

PURIFLOW® is also solvent-free, and its internal release agent ensures top cycle times in series production.

Votteler has been producing paints for the highest demands in industry and trade for more than 100 years. We serve automotive customers internationally, through our RIM oneshot technical center in Stuttgart, Germany, and in Lavonia, Michigan (USA).

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