

Press Release



Leverkusen,
March 12, 2018

Covestro thermoplastic composites mark entry into consumer appliances industry

Covestro AG
Communications
51365 Leverkusen
Germany

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

Premium material for designer appliances

Haier, a world-leading brand of major household appliances, has launched a state-of-the-art air conditioner under its Casarte brand, utilizing Covestro's novel continuous fiber-reinforced thermoplastic (CFRTP) composites. These composites are used to house the air conditioning units, which are artistically designed in the form of two standalone cylinders, providing structure and the premium aesthetic qualities known for the brand.

"As an award-winning high-end consumer appliance brand owned by Haier Group, Casarte is known for its high quality design and materials," says Xiongwei Li, Head of Marketing of Casarte, Haier Group. "In this context, it is only natural that an innovative material with premium qualities like CFRTP becomes the ideal choice for this premium air conditioner."

A plastic with a metallic effect

CFRTP composites are made from ultrathin, unidirectional (UD) tapes that are laminated together at specific angles to form sheets that can be customized to specific performance criteria. The long strands of fiber are oriented and provide strength in the lengthwise direction of the fibers. The resulting thin, stiff, and lightweight yet very strong sheets look and sound like metal, but have the flexibility of a thermoplastic material. Thanks to its unidirectional carbon texture, CFRTP lends the air conditioner a luxurious metallic effect with a sleek and beautiful surface. The overall design is modeled with Casarte's core values by placing an emphasis on design artistry.

"Not only does this mark a pivotal step into consumer home appliances for CFRTP composites, but it brings a new premium material and exciting new



design opportunities within the reach of designers,” says David Hartmann, one of the co-CEOs of Covestro CFRTP, together with Michael Schmidt.

A new premium material for designers

Traditionally composites have been known to be prohibitively costly and often difficult to work with. CFRTP changes all of this, offering a modern, cost effective and easy to form thermoplastic composite material that opens the path to completely new applications and user experience.

For the Casarte design team, it means that for the first time it has been possible to specify a high-performance composite material with unique aesthetics in their range of premium air conditioners. “Up until now, we have been quite limited in terms of material selection, typically relying on metal to provide the performance and aesthetics that we require,” says Shao Qingru, one of the CMF designers in the Casarte design team.

Attractive surface

In describing the depth and richness that Qingru sees in the surface texture of Covestro CFRTP, she points at a very tangible benefit of the material. “CFRTP is a very attractive material for us in that it has a natural, unidirectional surface pattern right from the start, unlike metals such as aluminum that requires some combination of finishing processes like sandblasting, brushing and anodizing before it is ready to go into the product. For CFRTP, the finish is all natural and has a beauty to itself.”

“Based on thermoplastics, CFRTP composites can be thermoformed with existing thermoforming tools at high yield rates and short cycle times. They are compatible with a wide range of coatings and decoration processes for designing unique surfaces, logos and other signature details. Laser-etched patterns transfer easily from steel molds,” says Michael Schmidt.

Smart air conditioning system

The Casarte air conditioner features intelligent recognition and air zoning. It comes with sensors that can detect the location of people in a room and perceive temperatures in humans so it can intelligently control the air flow and temperature in different zones based on the needs of people.

Strategic partnership

This is not the first time for Covestro’s innovative material solutions to be used in Haier products. The partnership was already forged at Haier’s foundation in 1984, when Covestro (at that time Bayer) began supplying raw materials to Haier for the thermal insulation of refrigerators. In October 2017, Covestro and Haier signed a global strategic cooperation agreement on the expansion of their decade-long partnership to a global scale, by constantly developing advanced



products featuring the latest material solutions to address the market demands of the global home appliances industry.

About Covestro:

With 2017 sales of EUR 14.1 billion, Covestro is among the world's largest polymer companies. Business activities are focused on the manufacture of high-tech polymer materials and the development of innovative solutions for products used in many areas of daily life. The main segments served are the automotive, construction, wood processing and furniture, and electrical and electronics industries. Other sectors include sports and leisure, cosmetics, health and the chemical industry itself. Covestro has 30 production sites worldwide and employs approximately 16,200 people (calculated as full-time equivalents) at the end of 2017.

This press release is available for download from the Covestro press server at www.covestro.com. A photo is available there for download as well. Please acknowledge the source.

Find more information at www.covestro.com and www.cfrtp.covestro.com.
Follow us on Twitter: www.twitter.com/CovestroGroup

ro (2018-024E)

Forward-looking statements

This news release may contain forward-looking statements based on current assumptions and forecasts made by Covestro AG. Various known and unknown risks, uncertainties and other factors could lead to material differences between the actual future results, financial situation, development or performance of the company and the estimates given here. These factors include those discussed in Covestro's public reports which are available at www.covestro.com. The company assumes no liability whatsoever to update these forward-looking statements or to conform them to future events or developments.