Press Release

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Covestro polyurethane resin earns commercial material certificate in solar energy from TÜV Rheinland

Covestro's Baydur® polyurethane resin has earned a commercial material certificate in solar energy by TÜV Rheinland Germany, the international independent third-party testing, inspecting, and certification agency. This is also TÜV Rheinland's first polyurethane material certificate applied to solar panel frames.

The frame is a crucial component of solar panel modules, fixing and sealing the panels and backsheet while enhancing the strength of the modules. This helps to facilitate the modules' transportation and installation, and the frame's improved performance directly influences the modules' service life. Photovoltaic frames are typically made of aluminum alloys that consume high amounts of energy during production. A polyurethane composite frame made of the Baydur® polyurethane resin provides solar module manufacturers with a new material choice, which is superior in anti-corrosion performance and cost efficiency. The commercial material is critical to applications in the solar energy industry and has been certified by TÜV Rheinland for its thermal life, physical performance, and electrical performance.

Hong Jiang, Executive Director of South China Region at TÜV Rheinland, said: "I am honored to present the first polyurethane certificate used for solar frames to Covestro on behalf of TÜV Rheinland. According to industrial standards, we have conducted strict tests on the resin. It conforms to the photovoltaic industry's requirements for long-term use and reliability. TÜV Rheinland will provide professional technical services to Covestro and support the development of clean energy and China's carbon neutral targets."

Based on the breakthrough Baydur® polyurethane resin and an innovative composite pultrusion production process, the polyurethane composite frames have excellent corrosion resistance, and are especially suitable for coastal and offshore power stations with high humidity and high-salt fog. As non-metallic material with excellent insulation performance, the frames do not require grounding and can reduce the occurrence of Potential-Induced Degradation (PID), thus improving the power generation efficiency of the solar panels.

Dr. Irene Li, Vice President of R&D at Tailored Urethanes in Asia Pacific of Covestro said: "The solar power industry is developing rapidly, and players along the industry chain are constantly updating their technologies with a focus on improving quality, reducing costs, and increasing efficiency. As the inventor of polyurethane, Covestro is looking forward to collaborating with industry partners to develop high-quality and efficient material solutions. Together, we can drive the technological progress of China's renewable energy industry and boost a circular economy."

In 2016, Covestro worked with its partner to develop the polyurethane composite solar frames and installed them on the roof of Covestro's Asia Pacific Innovation Center in Shanghai, which are still in operation. Starting from 2022, the frames have been exported to Germany for Building Integrated Photovoltaic applications.

About TÜV Rheinland:
As the global leading vendor of testing, inspecting, certificating, training, and consulting services, TÜV Rheinland Germany Group has its headquarters in Cologne, Germany, with over 150 years of experience and over 20,000 employees worldwide. With over 40 years of rich experience in the field of new energy, it is one of the world's market leaders in certificating and testing services for solar photovoltaic power stations, modules, inverters, components, energy storage, hydrogen energy, and fuel cells.

About Covestro:
Covestro is one of the world's leading manufacturers of high-quality polymer materials and their components. With its innovative products, processes and methods, the company helps enhance sustainability and the quality of life in many areas. Covestro supplies customers around the world in key industries such as mobility, building and living, as well as the electrical and electronics sector. In addition, polymers from Covestro are also used in sectors such as sports and leisure, cosmetics and health, as well as in the chemical industry itself.

The company is committed to becoming fully circular and is striving to become climate neutral by 2035 (scope 1 and 2). Covestro generated sales of EUR 18 billion in fiscal 2022. At the end of 2022, the company had 50 production sites worldwide and employed approximately 18,000 people (calculated as full-time equivalents).

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