

## Evonik's ROHACELL® Successfully Used in the First China C919 Commercial Airplane Large Size Composite Prototype

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- ♦ ROHACELL® rigid foam is successfully used on the rear pressure bulkhead prototype of C919
- ♦ Help aviation industry customer to achieve light weight design and reduce CO<sub>2</sub> emissions

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Evonik's ROHACELL® PMI (Polymethacrylimide) rigid foam is helping aviation industry customers fly high through increased weight-reduction, fuel conservation, reduced emissions and excellent overall performance; evidenced by the material's most recent use on the rear pressure bulkhead prototype of China's first large commercial airliner C919. It is the first time in China that a commercial aircraft applies composite material to its primary load-carrying structure.

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The rear pressure bulkhead prototype is the first large-sized composite part completed in C919, of which structure ROHACELL® is used as the stringers to enhance the stiffness and buckling properties of the part. The production of this prototype was finished within 5 months after the design CAD files were released, and the fast delivery of a high-quality ready-to-use ROHACELL® shape from Evonik ensured its realization. The successful roll-out of the rear pressure bulkhead prototype in mid October has further validated the engineering design and manufacturing process; it also guarantees the smooth development process of other composite parts on the aircraft.

Evonik played the role of a strategic partner during the design and development of the rear pressure bulkhead prototype for C919. ROHACELL® material solution helps not only to realize the complicated spherical structure but also ensure its functions. Because of its outstanding material properties—primarily its excellent creep and shear properties, even under prolonged dynamic stress—ROHACELL® has proven to be an excellent structural foam in fiber composite components for the aviation industry. The reduced weight saves fuel and also reduces CO<sub>2</sub> emissions.

“Evonik endeavors to contribute to the development of the Chinese aircraft industry with our innovative materials and expertise,” stated Siamak Djafarian, General Manager of Evonik High Performance Polymers

Business Line in Asia Pacific, “ROHACELL® has already been successfully used in the winglet and flap vane of ARJ21-700, the Chinese own-designed regional passenger jet. With this new development on C919, we see our cooperation with the Chinese aerospace industry going on.”

The C919 prototype was unveiled officially on November 16<sup>th</sup> at the Airshow China 2010 in Zhuhai. The Commercial Aircraft Corp of China (Comac) has announced a launch order of up to 100, and expects a demand for 2,000 C919 narrowbody in the domestic and overseas markets. Upon certification from regulators, the C919 is scheduled to enter commercial service in 2016.



**Figure caption:**

C919 was unveiled officially in November at the Airshow China 2010 in Zhuhai.



The rear pressure bulkhead, the first large size composite prototype on C919, was rolled out in October, of which structure ROHACELL® is used as the stringers to enhance the stiffness and buckling properties of the part.

**About Evonik**

Evonik Industries is the creative industrial group from Germany. In our core business of specialty chemicals, we are a global leader. In addition, Evonik is an expert in power generation from hard coal and renewable energies, and one of the largest private residential real estate companies in Germany. Our company’s performance is shaped by creativity, specialization, continuous self-renewal, and reliability.

Evonik is active in over 100 countries around the world. In its fiscal year 2009 about 39,000 employees generated sales of about €13.1 billion and an operating profit (EBITDA) of about €2.0 billion.

Evonik Industries has been producing specialty chemical products in China since the early 1990’s; with wide-ranging trading relations already in place prior to this. The Group now has a total of 20 companies and 16 production sites in the Greater China region. Evonik regards China as one of the driving forces of the

global economy, and we consequently intend to increase our business in Greater China to around €2 billion in the medium term.

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