Composites UK Trade Association

Alvant

INNOVATION IN MATERIALS

Shortlisted: Alvant

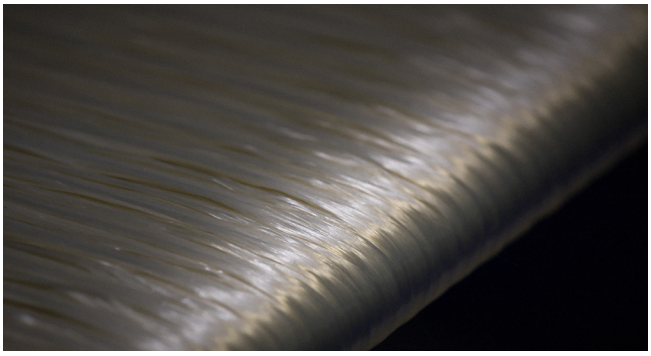
Reducing landing gear component weight by up to 30%.

Aluminium Matrix Composites (AMC) manufacturer Alvant and Safran Landing Systems have partnered on a two-year, £28 million, aerospace project, titled 'Large Landing Gear of the Future' with the aim to reduce landing gear components weight by as much as 30 per cent.

AMCs are an advanced class of composite materials in which the aluminium is reinforced with a secondary high-performance material, suiting applications where conventional metals are expected to approach or exceed their performance limits.

Alvant's contribution to the project is the design, manufacture and testing of an AMC brake rod, targeting a 30 per cent weight reduction over an equivalent titanium component whilst maintaining the same strength as steel. This will all be done using its own 'AlXal' product (pronounced Al-Zal) - a continuous fibre-based AMC, the result of a process created and patented by Alvant known as Advanced Liquid Pressure Forming (ALPF), a technology which brings together aluminium (the matrix), and the high-strength reinforcement materials to create AlXal. As such, this makes Alvant's product unique to the market.

Alvant believes AMCs can have superior strength compared to steel at less than half the weight, meaning highly loaded components made from traditional metals, such as steel, titanium and aluminium can be replaced by lightweight, low inertia parts without any increase in package size.



AMCs also offer multiple advantages over polymer fibre reinforced materials, such as carbon composites, these include higher transverse strength and stiffness, a higher thermal operating range, better wear resistance, superior damage tolerance and more opportunity to recycle.

Website: www.alvant.com

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