DAHER REAFFIRMS ITS LEADERSHIP IN ADVANCED COMPOSITES FOR AEROSPACE

News / Manufacturer

For this year JEC World show, Daher has doubled the size of its booth – now located in the exhibition's central aisle. The Group is presenting a full-scale demonstrator of its welded thermoplastic torsion box, representing the stabilizer of a tailplane for the Daher-built TBM aircraft. This prototype has reached TRL 5 maturity (Technology Readiness Level) after a series of tests in a simulated environment closely replicating its final use. It is now ready for large-scale validation, and could serve as a model for the wing and tail components of tomorrow's commercial aircraft: lighter, more efficient, and more environmentally friendly.

As a flagship of Daher's technological advancements, this demonstrator – selected for the JEC Awards – incorporates a range of cutting-edge manufacturing processes: Automated Fiber Placement, Direct Stamping, and co-consolidation of materials. The assembly of the torsion box is achieved through KVE's exclusive KVE Induct induction welding process, a technology that is revolutionizing the manufacturing of aerostructures.

Technological focus: thermoplastic welding

For the first time at JEC World, Daher is presenting daily demonstrations of the KVE Induct® thermoplastic welding process. This innovative process eliminates the need for traditional metal rivets in the assembly of aerostructures, offering significant advantages in terms of weight reduction, production speed, and recyclability. The benefits are numerous: a weight reduction of up to 20%; the saving of assembly time due to the elimination of mechanical fasteners; and improved durability, with fully recyclable components. This technology is perfectly aligned with the aerospace sector's decarbonization goals.

The assembly and certification of thermoplastic parts without fasteners is a major area of research and development for Daher, which currently is working – in partnership with the Luxembourg Institute of Science and Technology (LIST) – on a new demonstrator using infrared welding on aircraft ribs. An initial section of this demonstrator will be showcased on Daher's exhibit stand at JEC World.

Towards more sustainable aviation

Overall, Daher is presenting some 15 advanced composite parts at JEC World, demonstrating the breadth of its expertise: large, complex ribs; radomes; rotor blades; thick composite pylons; flight control pedal assemblies made from recycled thermoplastic composites (production scraps); and much more.

"With the growing maturity of our composite technologies and the gradual industrialization of thermoplastic welding, we are taking a decisive step toward more sustainable aviation," explained Dominique Bailly, the Director of Research & Development at Daher, and head of the company's Shap'in tech center dedicated to the aerostructures of the future in Nantes, France. "These developments demonstrate our commitment to offering innovative solutions that directly address the decarbonization challenges facing the aerospace sector. Our medium-term goal is to produce complex, large-scale parts for tomorrow's commercial aircraft targeted for the 2030-2035 timeframe."

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