

## Press Release

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### Porcher Industries supports Stelia Aerospace in thermoplastic fuselage demonstrator

Porcher Industries, a leader in technical textiles and thermoplastic composite solutions with a global platform delivering unique chemistries, technologies and innovations, is proud to support STELIA Aerospace during its recent « ARCHES BOX TP » research project, that was showcased at the Paris Air Show, Bourget, last week.

STELIA Aerospace has developed a full-scale thermoplastic fuselage demonstrator to allow an internal evaluation of the use of high performance thermoplastics – as opposed to thermosets – within a next generation single aisle aircraft. The demonstrator featured all the typical characteristics of a primary fuselage airframe those being thin skin, lightning protection, stringers and frames, to allow a detailed evaluation of these technologies in a true industrial environment.

STELIA Aerospace has invested nearly €2 million in their ARCHES BOX TP Research & Technology project (2015-2017) within the CORAC (French Strategic Advisory Board for Civil Aviation Research) platform. The project is both a technological challenge, thanks to the much lower level of maturity than thermoset matrix composite, and an economic issue, because its global application for the fuselage of the single aisle aircraft (with demanding Low Cost – High rate requirements) must be more cost competitive than the previous generation metallic technologies.

As both the project owner and design authority, STELIA Aerospace manufactured the demonstrator skin with Automatic Fiber placement (AFP- using thermoplastic slit carbon tapes and lightning strike protection) and Out of Autoclave (OOA) consolidation, before completing the final structure assembly at its in-house R & T STELIALAB in Méaulte.

STELIA Aerospace has selected leading French suppliers in thermoplastic composites to provide complementary technology packages such as: dynamic robotic induction welding of TP stringers, fast stamping of stringers and frames and hybrid TP structures by over-molding short fiber and long fiber.

For the ARCHES BOX TP project, Porcher's Industries technical team developed an organosheet from the Pipreg® range of thermoplastic solutions as the optimal material for the frames based on the initial Stelia Aerospace specification.

The PEKK based Pipreg® laminates, supplied use a specific carbon reinforcement, providing an exceptional combination of mechanical and fatigue properties from cryogenic to very high temperatures. Thanks to a cutting-edge and disruptive development mixing chemistry and processing, Porcher Industries has been able to develop an improved and unique interface between fibres and PEKK.

Porcher Pipreg® laminates satisfied all testing, engineering and processing targets for the ARCHES BOX TP project and were used by Stelia Aerospace to produce all composite frames in the demonstrator module, as well as being incorporated into an overmoulded access door component.

Porcher Industries has worked with Stelia Aerospace for more than 8 years and are a trusted development partner particularly in the field of thermoplastic carbon fibre materials. Following on from the success of this recent project they look forward to working with Stelia Aerospace to continue the development of innovative high—performance thermoplastic composite components in aerospace applications.

### **About Porcher Industries**

Porcher Industries has established itself as a world leader in the development and supply of innovative technical textiles and thermoplastic composite solutions, operating in five key areas : Aerospace & Defense, Automotive, Building, Industrial, Sports and Leisure.

With over 14 manufacturing sites in 3 continents delivering unique chemistries, technologies and innovations and a growing worldwide distribution network, Porcher Industries has the tools to supply world-class fabrics for industry customers globally.

### **About Stelia Aerospace**

With a turnover of 2,1 billion euros and 6600 employees worldwide (4500 in France, 600 in North America and 1500 in Tunisia and Morocco), STELIA Aerospace is one of the world leaders in the field of aerostructures, pilot seats and First Class and Business Class passenger seats.

STELIA Aerospace designs and manufactures the front fuselage sections for the entire Airbus family, as well as fuselage sections and specific sub-assemblies for Airbus, fully equipped wings for ATR, fully equipped central fuselages for Bombardier's Global7000, and complex metallic and composite aerostructure parts for Boeing, Bombardier, Embraer, Northrop-Grumman and others.

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#### About Porcher Industries.

As a major actor in high performance technical textiles and composites, Porcher Industries is active in five key markets: Aeronautics and Defence, Automotive, Construction, Industry and Electronics, Sport and Leisure. Present in Europe, China, the United States, Brazil and Russia, the group employs 1,950 staff and has a turnover of 305 M€.

