

BAMCO – Bamboo-based composites

What's the context?

Conversations around a green future emphasise energy and fuel emissions but the materials used in everyday products also have a huge impact too on the environment and human health. The EU's REACH regulation looks to combat this, removing certain chemicals from industrial processes, including the petrochemicals used to manufacture aircraft and other machinery that relies on a high strength-to-weight ratio.

What did we do?

Expleo is leading the BAMCO project, creating new green bio-composites for aircraft which **are lighter, equal in performance and greener** than composites currently used for cabin interiors. Made from bamboo fibres and bio-based resins, these new composites are being developed to replace the non-recyclable glass/phenolic composites used in cabin cladding. The project is currently at the pre-industrialisation phase and Expleo is working with six key partners: Arkema, CIRIMAT, Cobratex, Compositadour, Mécano ID and Specific Polymers.

What's the impact?

The bio-composites being **created reduce the weight of aircraft, lowering fuel consumption**. BAMCO materials can be implemented using standard composite processes to improve aircrafts' green credentials.. Case studies are ongoing with Airbus and bamboo has proven to provide the necessary strength and vibration absorption for use in these applications. Moreover, as a widespread natural crop, **the process can be easily industrialised instead of using finite natural resources**.

What's next?

After three years of research, the consortium has entered the pre-industrialisation phase with prototype aircraft parts to be manufactured in 2021. The next phase of the project, BAMCO II is being set up which will optimise the performance of bio composites developed in the initial project phase and is certified by Aerospace Valley.

