

Sky-high rest and relaxation with Recaro

This is a special feature from *PAX Tech's* [September 2023 APEX EXPO](#) issue on [page 24](#).



Cork could become a familiar material in seating in the future if tests prove viable.
Image credit Recaro

When [FACC](#) presented its BIOS — FUTURE CABIN at [Aircraft Interiors Expo](#) (AIX) in Hamburg in June 2022, it did so heralding new standards in terms of sustainability and passenger comfort.

In a company [blog](#) about the project, FACC revealed that nature, people and their perception were the starting point for a design process from the inside out, which also aims to create an immersive experience where passengers connect with each other, the cabin and the environment in a unique way.

BIOS, says the blog, unites BIOlogy and technology, and follows the diversity and perfection of nature. The result is the use of a resin derived from sugar cane, which has been optimized for use in aviation through intensive research work. Its surface is not only extremely robust, but also resistant to heat and chemicals.

So, if BIOS provides a glimpse of what the future of aircraft cabins will be, what does the future of aircraft seating look like?

For [Recaro Aircraft Seating](#), it's the R Sphere, which was shown for the first time during this year's AIX in June. As the company notes on its website, "We cannot make the industry sustainable alone, but we can contribute by making our seats more sustainable."

“Sustainability is an integral part of our DNA and long-term vision for not only Recaro but also for the industry,” Dr. Mark Hiller, CEO of RECARO Aircraft Seating and RECARO Holding tells *PAX Tech*. “We use a cohesive approach by prioritizing economic, ecological, and social initiatives. By investing in R&D and focusing on smart manufacturing, we are committed to making aviation more sustainable for customers, suppliers, and passengers.”



Recaro is investigating the application of natural and recyclable materials under its R Sphere concept. Image credit Recaro

According to the company, R Sphere removes all barriers (costs, certification, supply chain challenges, etc.) to develop the most eco-friendly seats in the skies.

“This project stemmed from our desire to showcase what sustainability means to Recaro and the

future of our aircraft seating solutions. Our Life Cycle Assessment (LCA) guided us in determining which approach is worth pursuing. The holistic approach incorporates sustainable materials, repair solutions, lightweight construction and recyclability into one seat,” says Hiller.

By reducing the weight of the seat, CO2 emissions are directly reduced. By increasing layout efficiency (more passengers per aircraft), fewer aircraft are needed. Through repair solutions, seats can remain in service longer. Through a recycling concept, resources can be conserved. By using sustainable (renewable, recycled) materials, the use of fossil materials is reduced.

The R Sphere concept uses a variety of recycled/upcycled materials. These include fishing nets, mattresses, cork armrests, PVC and cactus dress covers.



Like Recaro, Mercedes-Benz is evaluating more natural and sustainable materials for its interiors, such as on the concept VISION EQXX. Image credit: Mercedes-Benz/Daimler

Outside of aviation, such unconventional materials are being tested by the automotive industry. At CES 2022, Mercedes-Benz unveiled its unique special research electric vehicle, VISION EQXX.

The carpets are made of bamboo, while the seats, console, and doors of the vehicle are upholstered using a combination of [Deserttex](#) and [Mylo](#).

Deserttex is a leatherlike material made from nopal cactus and biobased polyurethane, exclusively for the automotive industry, by Mexican start-up [Adriano Di Marti](#). The company is also working with BMW.

In a first for the automotive industry, VISION EQXX uses Mylo, a sustainable leather alternative made from mycelium, the root-like system of mushrooms, and developed by [Bolt Threads](#).

“Our collaboration with Mercedes-Benz demonstrates the road ahead for Mylo. After debuting with some of the most celebrated fashion brands in the world, we knew it was just the beginning. Mylo is as versatile as it is sustainable, with the potential to have an impact from the runway to the roadway and beyond,” said Dan Widmaier, Bolt Threads Founder & CEO.

Could Mylo find its way into aircraft seating? Time will tell.

By using fully recyclable materials, Recaro hopes to implement a closed-loop process which overcomes the typical end-of-life issues befalling aircraft interiors. Such circularity is also a key focus for long-term Recaro partner, [Gen Pheonix](#), formerly ELeather.

“Circular thinking is critical across the entire supply chain in order to achieve truly sustainable outcomes. No company or industry can achieve this in isolation. Aviation is an ecosystem where all parties — material, seat, and parts manufacturers as well as operators — need each other in order to achieve a collective goal of reducing our impact on the planet” said Annie Gibbons, ELeather’s Head of Sustainability, ahead of the Aircraft Cabin Innovation Summit held in Atlanta Georgia in September 2022.

Regarding the R Sphere concept, the long-term goal of the project is to develop a model to collect and track feedback that will be used to make future Recaro products better. This is an admirable, achievable goal.

As Hiller explains, “All approaches have the goal to be certifiable as well. We are constantly exploring these avenues, as many of the materials and methods have a degree of maturity that are worth exploring further. However, other aspects of the R Sphere make sense in a concept form at this point in time.”