

## Product Information

# ROHACELL® HERO

## THE CORE MATERIAL FOR AIRCRAFT STRUCTURES



In January 2017, ROHACELL® HERO foam was qualified by AIRBUS under AIMS 04-11-011 and ABS5955 standard for aircraft structural parts.

This opens up new opportunities for AIRBUS, Tier 1 and other aircraft manufacturers to design innovative sandwich composite aircraft components that are lightweight, mechanically strong and efficient to produce, regardless of geometric dimensions.

### Putting ROHACELL® HERO to the test

To prove the technical performance of a composite part with a ROHACELL® HERO core, two structures (leading edge and nose landing gear door) were built and tested to the aircraft industry impact standard.



The outcome confirmed not only the technological, but also the economic feasibility of a ROHACELL® HERO core in structural aircraft parts.

### Proven technical & economic advantages

The main structural load case for fairings is the bird strike impact test. However, proof of economic benefits requires further consideration of both materials used and the type of processing technology.



**Bird strike impact test result:** The structures (a leading edge and a nose landing gear door) with a ROHACELL® 71HERO foam core passed the tests.

### Economic case evaluation results for the NLG door:

- Cost reduction of up to 25% per part
- Weight savings of up to 19% per part

### A strong case for time and labor savings

With "Foam/Infusion", overall savings result from shorter processing times during multiple part production steps throughout the process, as compared to a traditional honeycomb/prepreg method.

- Core preparation → ready-to-use cores
- Lay-up times → significantly reduced
- Core integration → less than 15 minutes
- Curing / infusion → one-shot curing

## AIRBUS procurement frame contract

In November 2016, Evonik Resource Efficiency GmbH proudly announced the signing of a procurement frame contract with AIRBUS Group (Toulouse, France) officially establishing joint agreement on development, manufacture and supply of structural foams and plastic products for aircraft applications. This agreement forms the basis for a sustainable, innovative and long-term partnership with the aircraft OEM and Tier 1 suppliers.

Full scale level: Real bird strike (8 lbs)  
Lightning strike  
Hail strike  
Static strength / stability  
Robustness

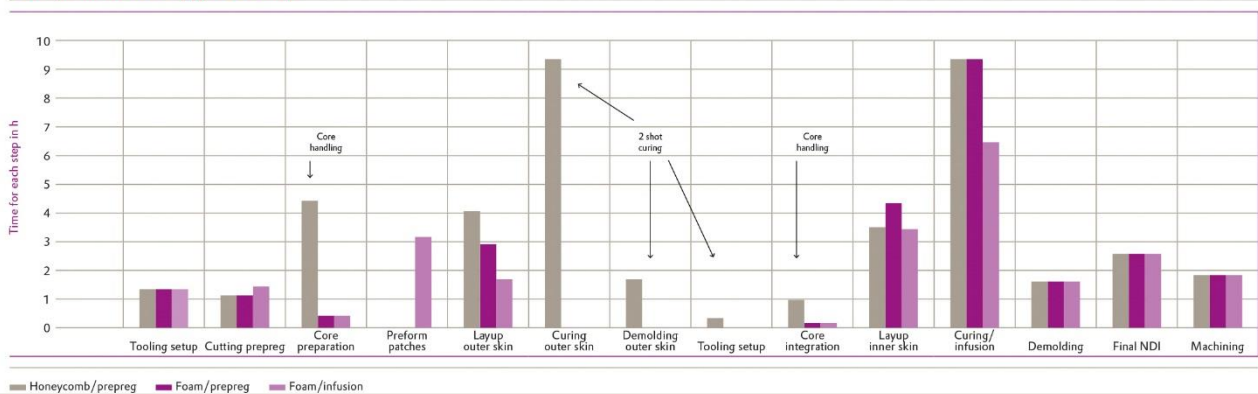
Detail and element level: Gel bird on nose area  
Hail strike  
SCB/CSB  
Local stability (BOCATAS)  
4 PB after impact  
4 PB no crack growth after impact

## TRL 6 level obtained for A320 LE project

To qualify ROHACELL® HERO, AIRBUS and Evonik did several investigations following the building block approach. ROHACELL® HERO passed all tests!

ROHACELL® HERO product specific: Allowables (specification)  
5 batches (Tension, Compression, shear), QTP/QTR

Comparison of time by process step



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