

aerotrope

COMPOSITES

CASE STUDY: SAILROCKET II WING RIB OPTIMISATION

We are experienced in the structural design of all types of fibre reinforced polymers (glass, carbon, wood, epoxy/polyester, monolithic and sandwich structures), as well as their integration with metallic structures and tensile membranes.

Physical testing of sub-elements:
(photo of sample rib element
delaminated after 4-point bend test)

Fracture plane FEA modelling:
(4 plots showing the simulated
failure progression of the rib element)

We closely link our microscale
investigations of failure modes with
the global design evolution, using
cohesive zone modelling techniques.

Understanding failure modes:
(fractography of skin/core interface)
Our understanding of the in-depth
behaviour of composites at the
micro-scale informs how we improve
the component design, materials
specifications and manufacturing
processes.