



designing for performance

concept development • research & technology • product development • manufacturing

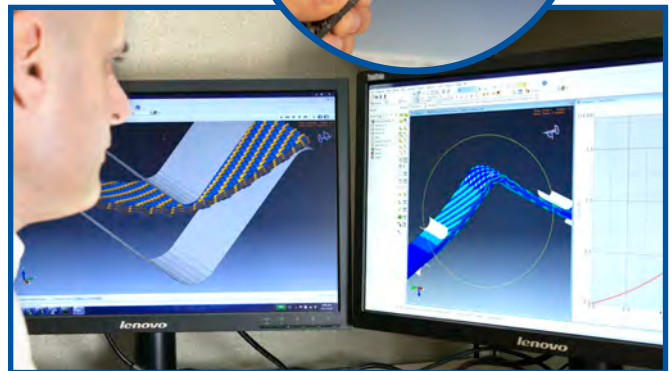


AEC designs, develops and manufactures lightweight composite parts for applications with demanding performance requirements. By blending our research and technology, product development, and full production capabilities, we can support products from concept development through full scale manufacture.

Research & Technology

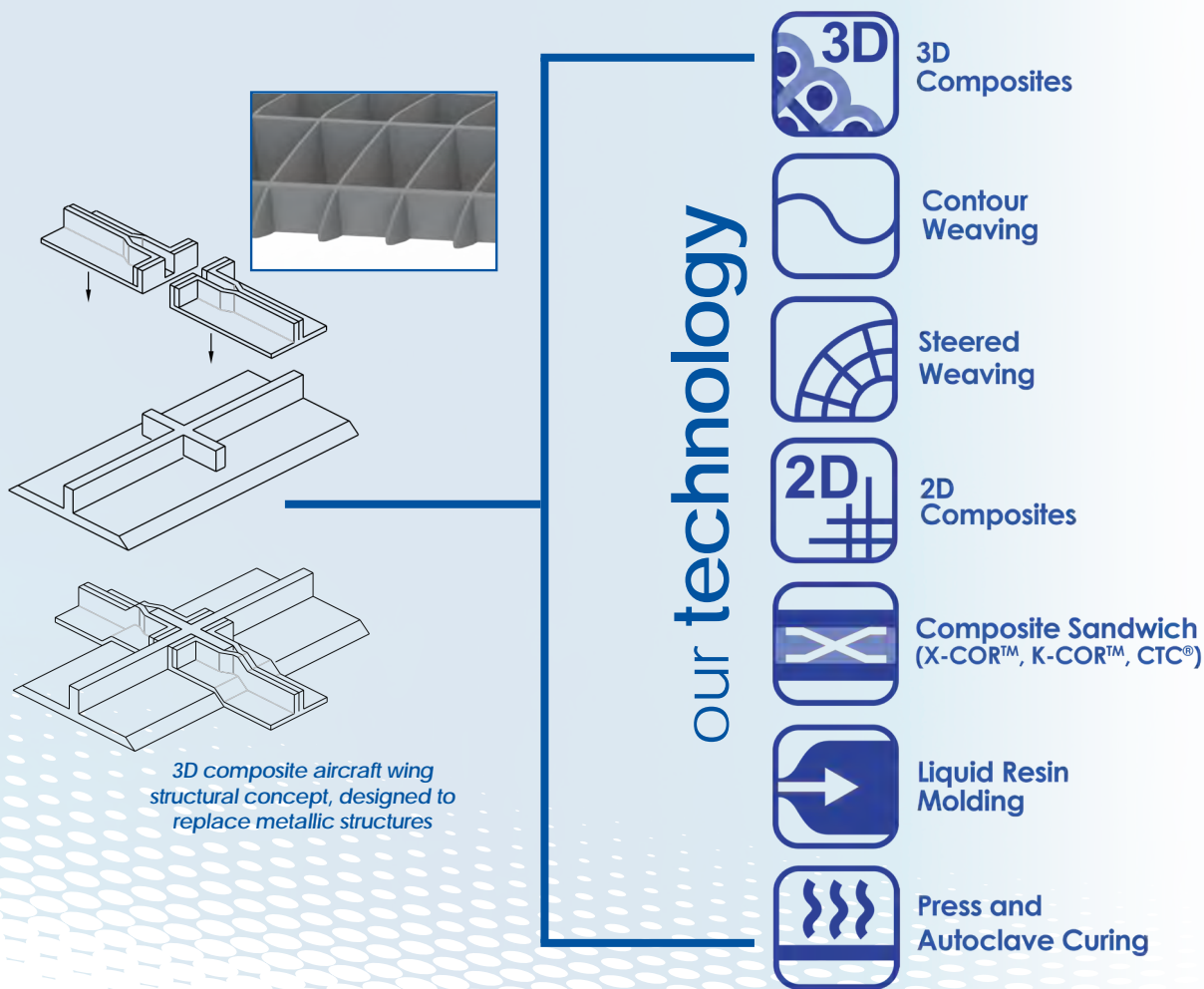
AEC's 45,000 square-foot (4200 square-meter) Research & Technology (R&T) Center is a highly innovative and responsive facility developed to support:

- new technology development (inclusive of material and fabrication processes) for advanced composite material/structure applications
- material system/fiber architecture engineering for application requirements
- concept development and prototype demonstration for customer programs



Product Development

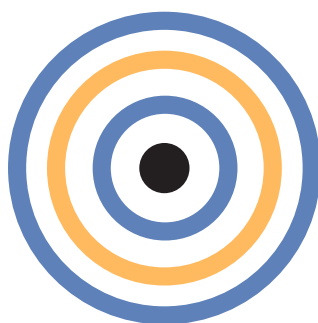
Very often, transitioning a program to production too early can result in a weak understanding of a part's production factors and excess manufacturing waste, defects, and redesign costs. This leads to costly production programs for both part manufacturers and their customers. AEC's product development resources focus on targeting



AEC product development brings fabrication processes under control



*pre-product development
products don't always meet
fabrication specification*



*on-target post-product
development
part specifications always met*

customer specifications to find the most producible and cost effective manufacturing approaches for making parts prior to entry into full scale production. These specifications may include size, weight, stress/strength, defect count/type, and other performance-impacting variables.

Manufacturing Flexibility

When our production programs transition to full production, we offer flexibility in our production sites. Our existing Rochester, New Hampshire (USA); Commercy (France); or Boerne, Texas (USA) facilities may be used, in addition to Albany International's (parent company) other production sites that span the globe. AEC also has the ability to partner with customers to support the development of new facilities for larger programs.



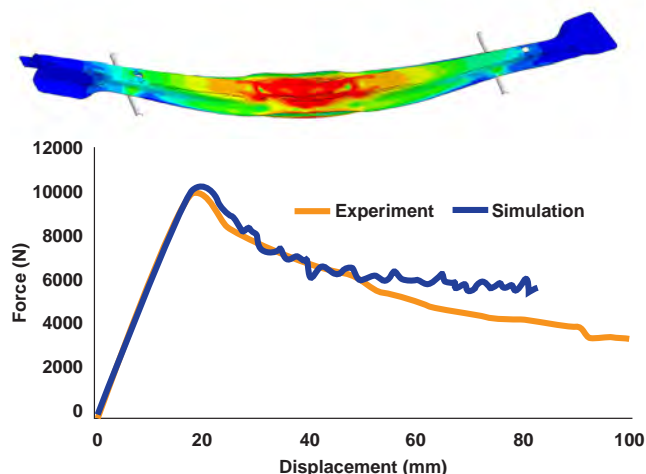
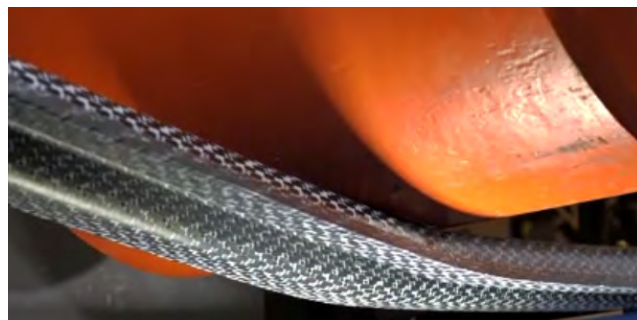
Technologies for Challenging Applications

AEC's composite technologies and manufacturing techniques solve challenges others have a hard time addressing. Examples include using:

- 3D composites for high load applications such as aircraft structures and engines, including the LEAP™ aircraft engine compressor fan assembly that uses 3D composites to help save approximately 300 pounds of weight compared to alternative metallic parts
- 2D composites that need tight tolerances and high quality finishes for aerodynamic applications and depend on these factors for maximizing flow paths
- X-KOR or K-COR sandwich structures, which weigh significantly less than other honeycomb sandwich structures in high load scenarios

Expanding technologies

Our ongoing study and development of newer composite technologies currently includes ceramic matrix composites (CMCs), tape placement, 3D pin insertion and other technology development projects driven by customer interests.



AEC's 3D composite design & analytical tools correlate to physical test data, yielding confidence in simulation data



AEC manufactures composite parts in the Rolls-Royce Liftfan® for F-35B aircraft's Short Take-Off Vertical Landing (STOVL) system (Outer Guide Vane (OGV) assembly shown above). These components require extremely tight dimensional tolerances in order for the overall assembly to maintain necessary flow patterns.

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