



Product Case Study

Inflatable Composites is revolutionizing portable structures using Air Core Composite™ technology. Using Air Core Composite™, they have increased their inflatable paddle boards' strength to perform like hard boards, yet retained the ability to make them easy to roll up and store.

AIR CORE COMPOSITE™

Air Core Composite™ is a patented carbon fiber reinforced laminate using Toray's continuous fiber reinforced thermoplastic composite (CFRT®) Cetex® TC940 (PET) as a base material. The laminate can be thermally bonded to polymer-coated inflatable membranes and is customizable by optimizing lay-up schedule for stress or load requirements for any deployable, portable structure. The laminate's enhanced rigidity offers dramatically improved performance, stowed package size reduction, faster deployability, and the ability to add structural attachment points.

Material: Toray PMC CFRT® TC940 (PET)

Advantages: lightweight, collapsible, portable, modular with structural attachment points, structural: high strength-to-weight ratio, rapidly deployable, extremely durable, excellent thermal barrier, corrosion, abrasion, puncture, and impact resistant

Applications: aerospace, bulding and costruction, emergency response, military, marine, oil and gas, recreation, and transportation

Summary: Air Core Composite™ products are lightweight rigid panels and structures that can be deflated, rolled, or folled into smal packages and are rapidly deployable when inflated. Utilizing thin layers of carbon fiber in a thermoplastic polymer matrix, they deliver enhanced integrity and higher flexural modulus properties to any inflatable structure.

Testing data provided by the United States Office of Naval Research, Naval Underwater Warfare Center, shows this advanced patented laminate technology increases inflatable panel stiffness by more than 350% and tubular beams by up to 500%. These products are protected under US Patent 8273427.



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