

Q^ΛRBON

AEROSPACE

Aerostructures Reimagined



A Premier Manufacturer of
Complex Composite Components
and Major Assemblies

QARBON AEROSPACE

US-based company with a global footprint
of 1.7M ft² of State-of-the-Art Facilities

Supporting Defense, Space, Commercial and
Business Aviation and Advanced Air Mobility

Getting your best ideas off the ground

With expertise in manufacturing a wide array of complex composite components and major assemblies, Qarbon Aerospace reliably delivers on the most demanding requirements.



Defense

Qarbon Aerospace plays an integral role in the US defense industry, specializing in the production of crucial military aircraft structures to exact specifications. Our facilities in Texas and Georgia support various defense programs, including the manufacture of completed wings for Northrop Grumman's HALE, Pratt & Whitney's F135 engine duct, Boeing's V-22 empennage and T-7A metallic structures. Our commitment to precision and reliability is unwavering in serving the US defense forces.

Space

As a strategic partner and supplier to the leading companies in the field of space travel, Qarbon Aerospace leverages our extensive expertise in manufacturing major structures such as wings and fuselages to play a crucial role in the development and production of next-generation space vehicles. We take great pride in our involvement in manufacturing the wing and fuselage for the Virgin Galactic Delta Spaceship, providing fully integrated structures that interface with mating structures. Additionally, our advanced thermoplastic technologies in welding and ground breaking electrothermal heating provide the space industry with innovative solutions that are unique and pioneering in addressing the challenges faced within the harsh environment of space.





Commercial and Business Aviation

Qarbon Aerospace has a distinguished history of manufacturing significant structures and components for leading OEMs such as Boeing, Airbus, and Gulfstream. Our high-quality, build-to-print composite parts and structures are utilized by these major OEMs. Each part is precision-engineered and meticulously prepared for safe and reliable operation on commercial aircraft worldwide.

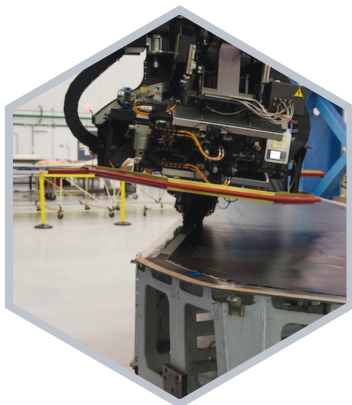
Advanced Air Mobility (AAM)

Qarbon Aerospace is at the forefront of shaping the future of Advanced Air Mobility (AAM) through our ongoing development of advanced thermoplastic technologies, which enables high-rate production necessary for the growing AAM market. Our expertise extends to patented processes in induction welding and our innovative all-composite electrothermal ice protection system HELIOS™. These technologies not only enhance performance but also ensure reliability and durability in demanding AAM environments.



As leaders in manufacturing solutions, **Qarbon Aerospace** is dedicated to advancing tomorrow's most sophisticated and sustainable air mobility solutions. Our commitment to innovation and cutting-edge technology positions us uniquely to meet the evolving needs of the aerospace industry, driving forward the development of next-generation air mobility solutions that are efficient, reliable, and environmentally friendly.

Manufacturing Capabilities

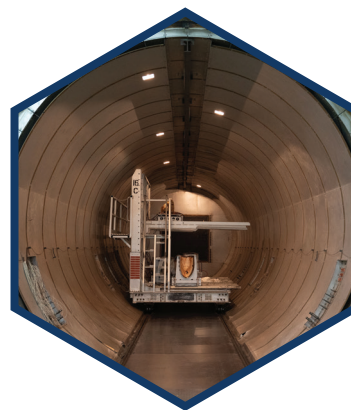


Automated and Hand Layup:

Our automated layup process incorporates advanced equipment such as 5-axis and 3-axis Automated Tape Laying, 5-axis Automated Fiber Placement capable of laying down both Thermoset and Thermoplastic materials, an Automated Stringer Machine, SQRTM, and Fiber Tow Placement machines. Furthermore, our climate-controlled areas for hand layup adhere to stringent air quality standards and utilize state-of-the-art technology such as overhead ply projection systems and debulk stations.

High-Temp Composites:

Expertise in material systems with service temperatures up to 700°F (371°C), Autoclaves up to 800°F, pressure up to 200 PSI, and ovens up to 1000°F.



Major Structural Assembly:

With a rich history in manufacturing significant structural assemblies, Qarbon Aerospace possesses the expertise and experience to produce composite and metallic assemblies, including wings, empennage, nacelles, and fuselage components for both fixed-wing and rotary aircraft.

Systems Integration:

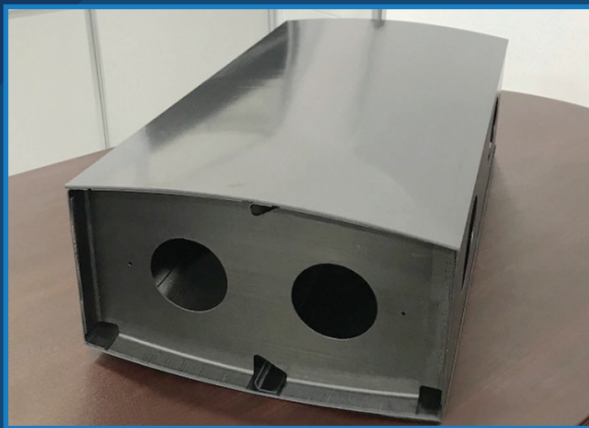
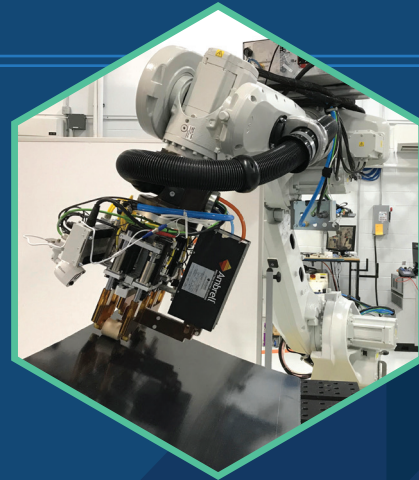
Qarbon Aerospace exhibits extensive expertise in systems integration across wings, fuselages, and empennage assemblies. Critical tests are performed in-house on precisely installed hydraulic, electrical, and fuel systems to ensure seamless coordination and optimal performance of these integrated systems within aerospace structures.



Thermoplastic Technologies

Induction Welding

Qarbon Aerospace's advanced fusion-joining technology for thermoplastic structures eliminates the need for fasteners in assemblies, reducing weight and manufacturing costs significantly. Our technology has demonstrated superior joint strengths as compared to co-cured autoclave and comparable to co-consolidated autoclave curing processes. Qarbon Aerospace is now prepared to implement this technology in launch platform applications.

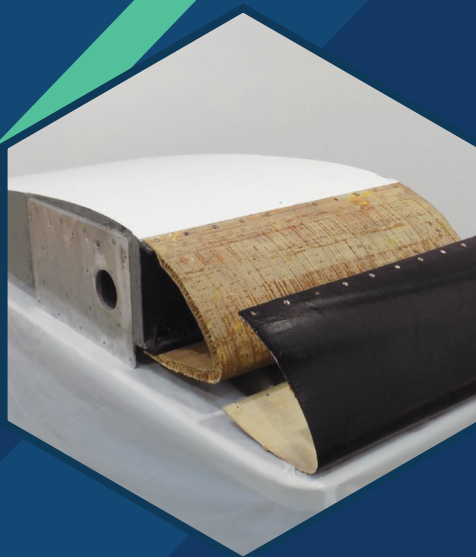


Qarbon Differentiators

- Dissimilar thickness joints without the need for a susceptor
- One-side-only access enables closed box assemblies and reduced tooling costs
- Focused heat only where it's needed
- Scalable for large primary structure
- Works with commercially available materials
- Weld rates demonstrated up to .75 m/min

Thermoplastic Icing Protection System

Qarbon's HELIOS™ electrothermal icing protection systems are designed for both installation on existing aircraft, as well as new production next generation aircraft, delivering safety improvements, weight savings and maintenance reductions. HELIOS™ is a generational leap forward in aircraft icing protection.



Qarbon Differentiators

- Direct replacement for legacy systems
- Multi-zone system optimized for low power consumption during de-icing
- Low power requirements
- Weight savings vs pneumatics
- Significant maintenance reduction
- Enables electrification of aircraft
- Painted or polished leading edge capable

HELIOS™
Ice Protection
by QARBON AEROSPACE

Aerostructures Reimagined



Red Oak, Texas: Large Complex Structural Assembly

123-acre site with 772,000 ft² of manufacturing space, just minutes from DFW International Airport.

Major Programs:

- HALE Integrated Wing
- Virgin Galactic Delta Class Wing & Fuselage
- V-22 Integrated Empennage
- F135 Engine Compressor Duct
- G600 Horizontal Tail
- T-7A Wing, Empennage & Forward Fuselage
- 525 Relentless Fuselage
- 767 Aft Pressure Bulkhead

Milledgeville, GA: Premier Composite Manufacturing

165-acre site with 650,000 ft² of manufacturing space, near Atlanta, GA.

Major Programs:

- 787 Frames, Longerons & Stringers
- 777 Flaps, Spoilers and Ailerons
- 767 Wing Center Section Keel Beam & Seal Depressor panels
- KC-46A Tanker Engine Cows
- G650 Spoilers, FTE, Winglets & Cove panels
- HALE Wing Structure
- V-22 Sponsors & MLGD, Ramp & Door Assemblies & Wiper Fairings
- Embraer E-2 Rudder & Elevator





Rayong, Thailand: Best-Cost Complex Composite Components

12-acre site with 150,000 ft² of manufacturing space, near Suvarnabhumi International Airport.

Major Programs:

- Fan Case and Acoustic Liners for major Trent and Pearl Engines
- A320 family Flap Detail Parts
- A320 family Vertical Tail Leading Edge and Fairings
- A330 family Vertical Tail Trailing Edge and Fairings
- A330 family Wing Leading Edge Composite Panels
- A350 family Wing-to-Body Fairing Composite Details
- A350 family nsBB Composite Details
- 787 Pylon Composite Fairings and Detail





Contact Qarbon Aerospace to take
your ideas to new heights.

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