CARPENTER®

WHEN PERFORMANCE IS **EVERYTHING**

ADVANCED SOLUTIONS FOR AEROSPACE STRUCTURES

Expectations are higher than ever: planes must be lighter to be more fuel efficient and have less impact on the environment. But airplanes and their systems are only as strong, reliable, and sustainable as their materials.

The future of aerospace demands continuous innovation. Decades of materials development and manufacturing experience allow us to help you compete consistently in a changing world.

Production capacity, material selection, research and development, quality, and expertise are crucial for mission-critical performance. With Carpenter, you have:

- The world's most advanced, integrated mill system, with increased wrought and powder capacity
- Access to highly trained materials experts, metallurgists, research scientists, and engineers
- Superior quality, ultra-premium alloys, powders, titanium, and engineered materials

Bring your materials challenges to Carpenter.
Let's go farther together.

Structural components, such as landing gear, fuselage and wings, flaps, tracks, actuators, and avionics must meet the same high-performance criteria.

Your Solutions Partner

Carpenter Technology Corporation helps customers rethink the boundaries of specialty alloys, finding new uses for existing alloys or developing new materials for unique design challenges.

- CarTech Custom 465® alloy can provide up to 55% strength increase over 15-5 stainless and can replace cadmium plated steels for reduced environmental impact and maintenance costs.
- Soft magnetic alloys for avionics and motors can reduce motor size and provide weight savings.
- Advanced gear materials, such as CarTech Pyrowear® 53 alloy, are being used in new ways, enabling advances in engine reliability and efficiency. And, CarTech Ferrium C61[1] & Ferrium C64[1], can enable improvement in gear design and performance for future platforms.
- Customized additive manufacturing feedstock solutions enable customers to efficiently scale up and optimize their processes.

Carpenter produces hundreds of alloy grades. Those listed here are some of our most requested grades. Customized compositions can be developed to your specifications.

ALLOYS FOR AEROSPACE STRUCTURES	CORROSION RESISTANT	HIGH ULTIMATE STRENGTH (>250 KSI)	STRENGTH TO WEIGHT RATIO
CarTech A-286	✓		
CarTech ACUBE® 100	✓		
CarTech Aermet® 100		✓	
CarTech AerMet 310		✓	✓
CarTech Custom 465®	✓		✓
CarTech Custom 630 (17Cr-4Ni)	✓		
CarTech Ferrium® S53[1]	✓	✓	
CarTech NiMark® 250		✓	✓
CarTech Hy-Tuf		✓	
CarTech HY-180		✓	
CarTech 13Cr-8Ni	✓		
CarTech 15Cr-5Ni	✓		
CarTech 300M		✓	
CarTech 718	✓	✓	
Ti 3Al-8V-6Cr-4Mo-4Zr	✓	✓	✓
Ti 3Al-8V-6Cr-4Mo-4Zr (Beta C)	✓		✓
Ti 6Al-4V	✓	✓	✓

GEAR ALLOYS	CORROSION RESISTANT	HIGH ULTIMATE STRENGTH (>250 KSI)	STRENGTH TO WEIGHT RATIO	WEAR RESISTANT/ FATIGUE STRENGTH	HIGH HARDNESS
CarTech Pyrowear® 53		✓			✓
CarTech Pyrowear 675	✓				✓
CarTech Ferrium C61™[2]			✓	✓	✓
CarTech Ferrium C64®[2]			✓	✓	✓
CarTech Ferrium M54[1]	✓				✓
CarTech 4330	✓				
CarTech 4340	✓				✓
CarTech 9310				✓	✓

[1] Manufactured and sold under license from QuesTek Innovations, LLC. Ferrium is a registered trademark of QuesTek Innovations, LLC.

ALLOYS FOR AEROSPACE AVIONICS, APU & MOTORS	HIGH PERMEABILITY	LOW COERCIVITY	HIGH ELECTRICAL RESISTIVITY	CORE LOSS	HIGH MAGNETIC SATURATION	HIGH STRENGTH
SOFT MAGNETIC ALLOYS						
CarTech Hiperco® 27					✓	
CarTech Hiperco 50	✓	✓		Low	✓	
CarTech Hiperco 50 HS				Moderate	✓	✓
CarTech High Permeability "49"®	✓	✓			✓	
CarTech HyMu "80"	✓	✓				
CarTech Hypocore™	✓	✓	✓			

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CARPENTER®

www.cartech.com

Carpenter Technology Corporation
Corporate Headquarters:
1735 Market Street, 15th Floor
Philadelphia, PA 19103
610-208-2000
service@cartech.com

U.S. Sales
1-800-654-6543

Europe Sales
32-10-686-010

Asia Sales
65-6738-2401

@CarpenterTech

www.facebook.com/CarpenterTech