

## Carbon-Fiber Reinforced Thermoplastic Composites for Complex-Shape Metal Replacement in Aircraft Interiors

Greene Tweed offers a wide range of interior product solutions for crew and passenger seating, galley, overhead bin compartment doors, brackets, fittings and attachments for business and commercial airplanes, military aircraft, helicopters and eVTOLs.

Greene Tweed's engineers, designers and technical experts provide high-performance thermoplastic composite components that can withstand extreme temperatures, pressures, and corrosion related to flight conditions and solve the toughest light-weighting and wear challenges within the interior of the aircraft while maintaining safety and quality.



- Galley Panel Covers, Brackets, and Fittings
- Cockpit & Crew Seats, Access Doors & Components
- Lavatory Enclosures, Brackets
- Passenger Seat and Overhead Bin Brackets, Fittings, and Attachments

## The Benefits of Xycomp® Discontinuous Long Fiber (DLF™) Composites

Lightweight, high-performance alternative to metal parts, components, and assemblies.

### Strength & Performance

- Aerospace-grade carbon fiber pre-preg tape (AS4/PEEK, PEKK, PEI)
- Matched-die compression molded
- Superior strength-to-weight ratio
- Excellent impact performance
- Thermal stability, chemical and environmental resistance
- Galvanic corrosion mitigation

### Weight Savings

- Significant reduction in density vs. metals
- Typical application weight savings of 35-50%

### Tested & Approved

- Meets FAA/EASA Burn Test (FAA AC20-135) and FST requirements
- Aerospace production pedigree for 14 years with sharable and fully characterized material allowables
- OEM and Tier 1 supplier approvals (incl. Collins Aerospace, Safran)
- Non-Toxic and Recyclable

### The Greene Tweed Imprint

- Full-service partner – in-house engineering, design, testing & analysis
- Full Xycomp® DLF™ design allowables data
- Over 400,000 Xycomp® DLF components flying
- Global presence and support

## The Benefits of Xycomp® Discontinuous Long Fiber (DLF™) Composites

### Xycomp® 5175 (PEEK/Carbon DLF): Flame, Smoke, Toxicity (FST) and Heat Release (OSU) Results

Ignition Testing		Avg Time to Extinguish (Sec)	Avg Burned Length (In)	Drip Time to Extinguish (Sec)
60 Sec Vertical	Requirement	15 Max	6 Max	3 Max
	Test Results	<1	0.7	No Drips
12 Sec Vertical	Requirement	15 Max	8 Max	5 Max
	Test Results	<1	0.1	No Drips
30 Sec/45°	Requirement	15 Max		
	Test Results	0 (no ignition)		

Heat Release, Smoke Density	Peak Heat Release Rate (KW/m2)	Total Heat Releases Rate at 2 Minutes (KW-min/m2)	Smoke Density, Ds (ppm)
Requirement	65	65	200
Test Results	17.3	-2.9	1 (NF)
			1 (F)

Toxic Gas Analysis (ppm)	HF	HCl	HCN	SO <sub>2</sub>	NOX	CO
Requirement	200	500	150	100	100	1000
Test Results (NF)	NI	NI	NI	NI	NI	NI
Test Results (F)	NI	NI	NI	NI	.5	2

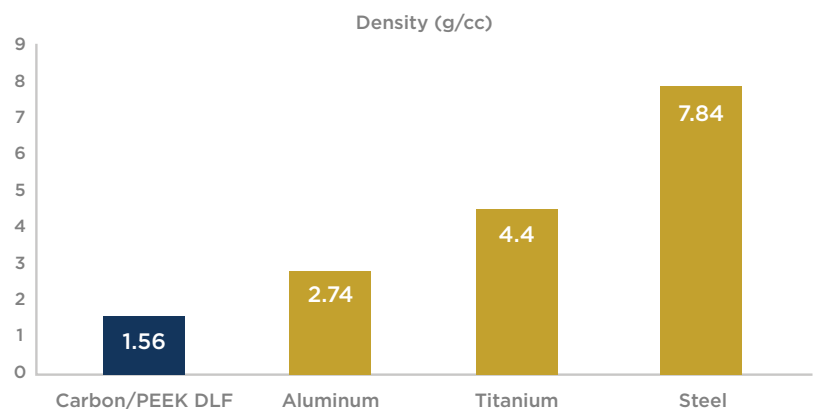
Non-Flaming Mode = NF

Flaming Mode = F

NI = No Indication

### Weight Savings vs. Metals:

- 43% density reduction vs. aluminum, 65% vs. titanium, 80% vs. steel
- Results in typical 35%+ weight savings vs. aluminum in actual parts
  - >50% vs. Ti or Steel
- Fuel Savings, CO<sub>2</sub> Emissions Reduction, Payload Capacity



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