

Xycomp® DLF™ complex-shaped component replaces multi-pieced metallic assembly at a fraction of the weight.

Features and Benefits

- » Up to 60% weight reduction compared to metal components, for reduced fuel burn and emissions
- » ProFusion® near-net compression molding enables consolidation of complex assemblies into fewer parts, with high quality and repeatability
- » Exceptional fatigue, vibration and impact resistance delivers performance equal to or better than metal
- » Significant improvements in impact & elevated temp performance vs. injection-molded materials
- » Excellent retention of properties after thermal aging
- » Chemical resistant to all common aerospace fluids
- » Components are manufactured with nearly zero waste and are recyclable at the end of their service life

High-Performance Thermoplastic Composite

Performance of Metal at a Fraction of the Weight

Xycomp® DLF™ is a lightweight thermoplastic composite developed to replace complex-shape metallic components for aerospace applications, and provides value in other demanding environments like defense, space, industrial and more. With outstanding fatigue, vibration, and impact resistance, it provides up to 60 percent weight savings to help reduce emissions and fuel burn while providing exceptional performance. Xycomp® DLF™ is produced from aerospace-grade, carbon fiber-reinforced, unidirectional prepreg tape which is chopped into flakes, resulting in high fiber content (70% by weight), longer fibers (0.5 in./13 mm or greater), and a high degree of material control.

Flakes are matched-die compression molded in a proprietary process called ProFusion®, enabling the production of 3D shapes with variable wall thickness and molded-in features such as fasteners, inserts, and ribs. The benefits of this molding technique include the consolidation of complex assemblies into fewer parts, and the optimization of raw material required per component (buy-to-fly ratio). In addition to these properties, Xycomp® DLF™ is resistant to all common aerospace fluids.

Xycomp® DLF™ components pass both FST (flame, smoke, toxicity) standards and the 15-minute burn-through requirement, making them ideal for use in aircraft interiors, engines, nacelles, or aerostructures. Through investment in extensive technical capabilities, Greene Tweed partners with customers from concept and design analysis, through certification, to production. Xycomp® DLF™ components are manufactured with nearly zero waste, and are fully recyclable at the end of their service life.

Applications

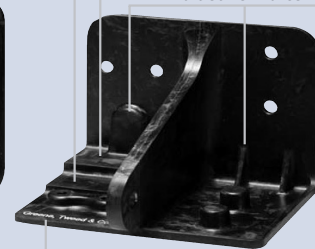
- » Nacelle and engine components
- » Interiors
- » Aerostructures

Molded-in holes
Molded-in insert



Molded-in hole with helical insert
Molded-in holes with counter sinks

Varied wall thickness
Molded reinforcements

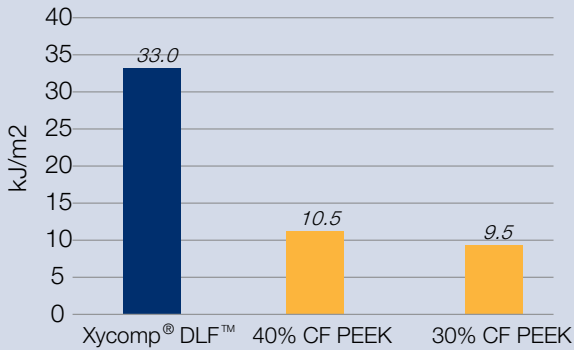


Molded-in labeling

Selected Benefits Vs. Injection Molding

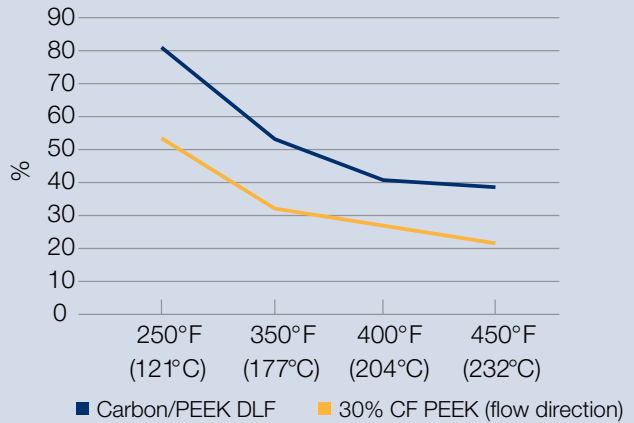
Impact performance vs. injection molding materials

Izod impact, Xycomp® 5175 DLF™ vs. 30% and 40% CF PEEK



Elevated temperature performance vs. injection molding materials

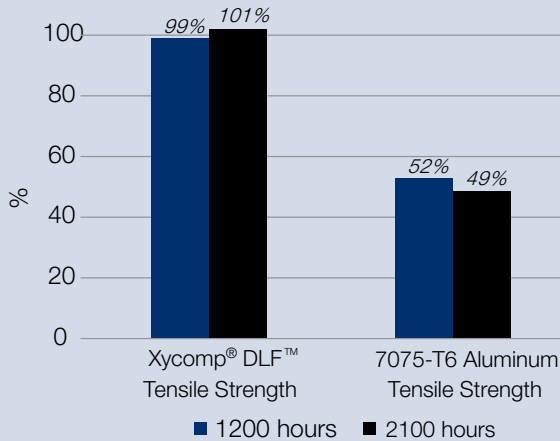
Retention of RT tensile strength at elevated temperature, Xycomp®5175 DLF™ vs. 30% CF PEEK



Selected Benefits Vs. Metals

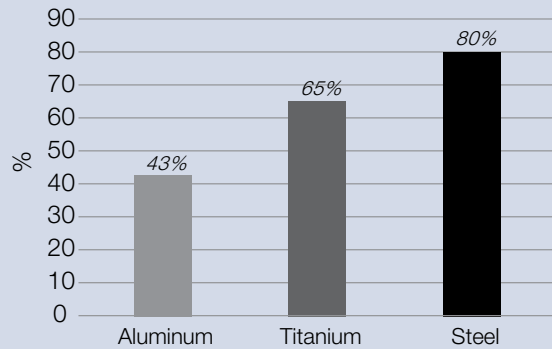
Thermal aging performance vs. aluminum

% Retention of properties after thermal aging at 350°F (177°C) Xycomp®5175 DLF™ vs. aluminum



Density reduction vs. metal for weight savings

Xycomp® DLF™ density reduction vs. metal



Statements and recommendations in this publication are based on our experience and knowledge of typical applications of this product and shall not constitute a guarantee of performance nor modify or alter our standard warranty applicable to such products.

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