Greene Tweed

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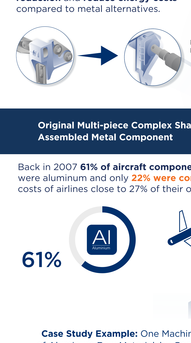
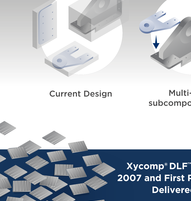
THE FUTURE OF FLYING WITH DLF™

Xycomp® DLF™ components provide significant weight reduction and **reduce energy costs** compared to metal alternatives.



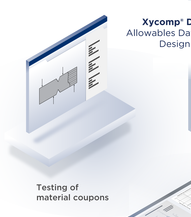
Original Multi-piece Complex Shape Assembled Metal Component

Back in 2007 **61% of aircraft components** manufactured were aluminum and only **22% were composites,** with fuel costs of airlines close to 27% of their operating cost.



Case Study Example: One Machined 0.61lb Bracket Requires 3.9lbs of Aluminum Raw Material, by Comparison 0.371bs of Xycomp® DLF™ is Required to Net-Mold One 0.371b Bracket (no waste)

Traditional Metal CNC Operation

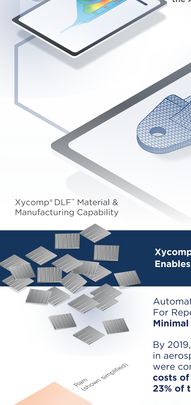


Current Design | Multi-piece subcomponent parts | Multi-piece metal assembly & fasteners

Xycomp® DLF™ Developed in 2007 and First Production Parts Delivered in 2011

The Boeing 787, with a first flight in 2009, had a **~50% composite** material usage[1] and **20% aluminum.**

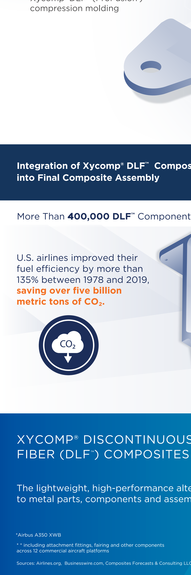
Xycomp® DLF™ Material Allowables Data for Predictive Design Analysis



Xycomp® DLF™ Predictive Analysis Enables Redesign for an Optimal Single-piece DLF™ Component

Xycomp® DLF™ Minimal/No Waste with Near-Net Molding Results in Typical **Weight Savings of 35% to 50%**

Changing from metal to composite results in an **average savings** in operating cost of **$450/lb/year**



Xycomp® DLF™ Manufacturing Technology Enables Cost-effective Production

Automated Processing and Control For Repeatability and Efficiency with **Minimal Operator Interaction**

By 2019, 53% of materials used in aerospace manufacturing were composites* with the **fuel costs of airlines dropping to 23% of their operating cost.**

Integration of Xycomp® DLF™ Composite Component into Final Composite Assembly

More Than **400,000 DLF™** Components Currently in Service**

U.S. airlines improved their fuel efficiency by more than 135% between 1978 and 2019, **saving over five billion metric tons of CO_2.**

Xycomp® DLF™ Part in the final assembly

XYCOMP® DISCONTINUOUS LONG FIBER (DLF™) COMPOSITES

The lightweight, high-performance alternative to metal parts, components and assemblies

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*Airbus A350 XWB

** including attachment fittings, fairing and other components across 12 commercial aircraft platforms

Sources: Airlines.org, Businesswire.com, Composites Forecasts & Consulting LLC, Greene Tweed, IATA.org, Keyphone.com, Statista.com