

# Structural Thermoset Composites

STC® – Ultra Performance Moldable Composites

# Fortium™

High Glass Fiber Composites

# Ultrium™

Carbon Fiber Composites



**Composites®  
International**

**Ideas For Meaningful Results.**

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# Structural Thermoset Composites

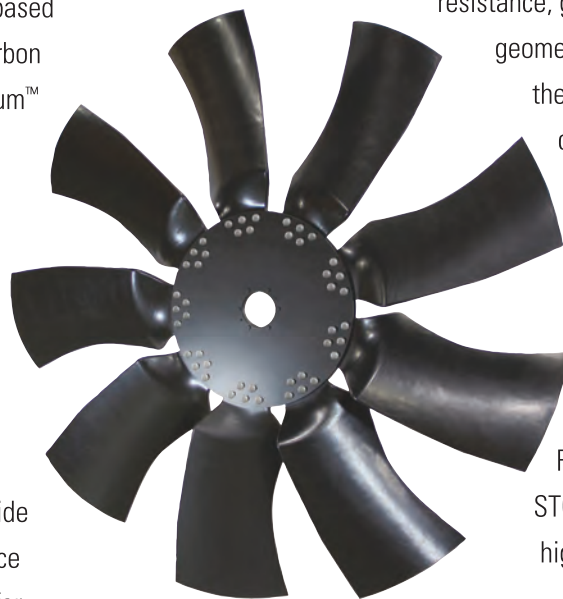
## STC<sup>®</sup> – Ultra Performance Moldable Composites

### **“Bridge The Gap” Between Traditional Materials And Advanced Composites With IDI’s New Fortium™ And Ultrium™ Structural Thermoset Composites (STC<sup>®</sup>).**

IDI’s materials engineers have expanded their line of Structural Thermoset Composites (STC<sup>®</sup>) with the introduction of Fortium™, a high glass based composite material and Ultrium™, a carbon fiber based composite material. Fortium™ and Ultrium™ STC<sup>®</sup> enables product designers and engineers to bridge the cost and performance gap between lower performing traditional materials like metal and higher cost advanced composites. Fortium™ and Ultrium™ possess exceptional specific stiffness and specific strength and Structural Thermoset Composites provide greater design flexibility at a lower price than an advanced composite and at a far lower density than metal.

For years, design engineers and molders have been converting products from metals to thermoset composites. They know that thermoset composites can help improve the design, manufacture, and durability of a vast number of products.

With the expansion of Fortium™ STC<sup>®</sup> and Ultrium™ STC<sup>®</sup> to include higher glass and carbon fiber percentages, IDI Composites International now offers a solution truly comparable to advanced composites. We outperform metals



**Conversion From Traditional Materials To Thermoset Composite Fan Blades.**

and thermoplastics due to benefits including higher strength per unit weight, better dimensional stability and corrosion resistance, greater design flexibility for complex geometries, and lower cost. Because varying the type and quantity of its ingredients can alter the properties of a structural thermoset, custom formulations can be created specifically tailored to the requirements of an application, and because of their moldable characteristics, STC's<sup>®</sup> can be converted to complex geometries. Furthermore, as a thermoset material, STC<sup>®</sup> will not melt or deform at high temperatures.

Firmly established in a number of industries, Structural Thermoset Composites (STC<sup>®</sup>) are finding their way into new applications as more designers and engineers discover the benefits of these high-performance, cost-effective materials.



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# Fortium™

High Glass Fiber Composites

# Ultrium™

Carbon Fiber Composites

Fortium™ Structural Thermoset Composites are a series of composite products reinforced with 40% - 65% discontinuous glass fiber. This high level of reinforcement imparts high strength and impact resistance to these composite materials. The discontinuous nature of the reinforcement allows these materials to be molded into complex geometries by compression molding or injection molding processes.

The use of various thermoset resins, like polyester, vinyl ester, epoxy and vinyl ester/urethane hybrids, imparts outstanding temperature resistance and toughness to these composite solutions. This choice of resins and various reinforcement levels also provides IDI Composites with a great deal of flexibility to optimize the cost and density of these composite materials putting them on par with Aluminum and Steel on a performance/weight basis.

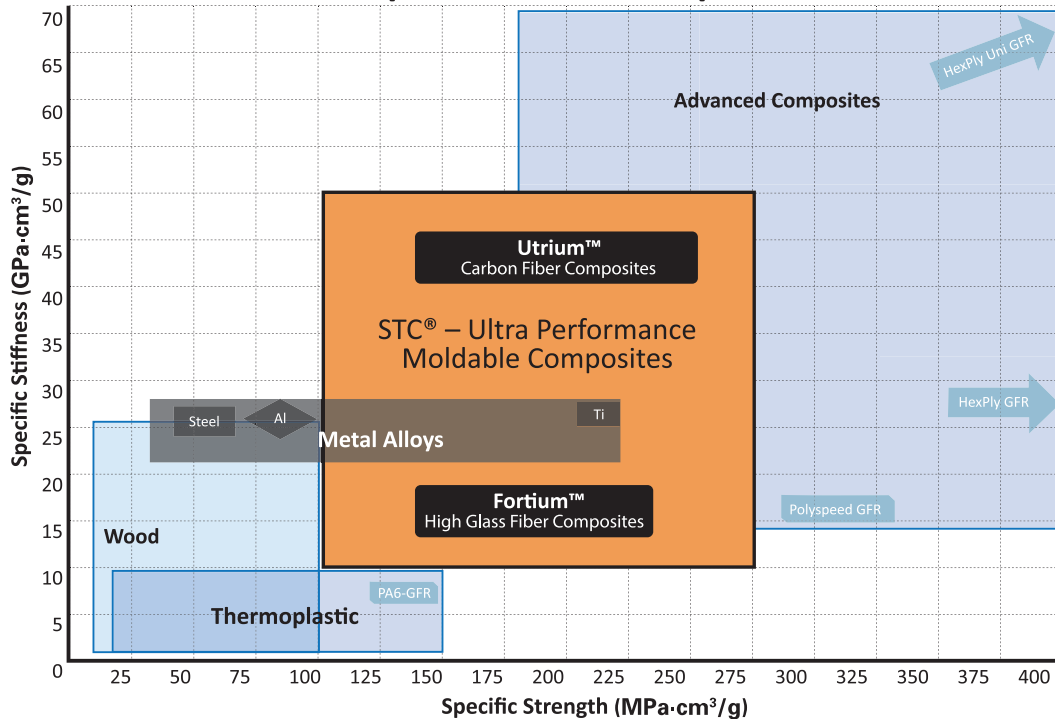
**High Strength**  
**Impact Resistant**  
**Highly Moldable**

Ultrium™ Structural Thermoset Composites are a series of materials that raise the bar on stiffness as a function of weight to a level beyond that of Fortium™ STC®. The carbon fiber reinforcement of Ultrium™ STC® makes these products well suited for complex geometric applications that require performance optimized high stiffness and low weight.

The ability to tailor the resin system (vinyl ester/urethane and epoxy are just two of the possible options) with the carbon fiber provides application designers with the compatibility necessary to marry the Ultrium™ STC® with carbon pre-pregs. This multi-material solution provides engineers with the high strength to weight ratios they have come to expect with a composite solution with the desire and need to push design geometries to the next level.

**High Stiffness / Weight Ratio**  
**Carbon Pre-Preg Compatibility**  
**High Strength To Weight**

## Specific Tensile Properties





The IDI 3i Composites Technology Center is the research and development division of IDI. The 3i team generates and proves new ideas, approaches and materials to address the engineering and performance challenges of both our customers and the industry. We design, develop and manufacture thermoset composites for innovative customers seeking to go beyond the value limitations of conventional materials.



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IDI Composites International (IDI) is the premier global custom formulator and manufacturer of thermoset molding composites and compounds for OEMs and molders. The company provides customized polyester/vinylester-based bulk molding compounds (BMC), sheet molding compounds (SMC), and a new line of Structural Thermoset Composites (STC® - Ultra Performance Moldable Composites) that are manufactured in both sheet and bulk formats for the most demanding applications.



**GLOBAL SOLUTIONS  
GLOBAL LOCATIONS**



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Oldbury, UK

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Aguirre, Puerto Rico

Mexico  
Mexico City, Mexico