Mass Reduction With Value-Engineered Composites

Molded Fiber Glass Companies  
www.moldedfiberglass.com
The Challenge:

Reduce mass. Increase strength. And hit the cost target.

In the face of intensifying government regulation and market demands, manufacturers of energy-consuming and energy-producing products are confronting new challenges to reduce mass and improve efficiency—while minimizing impact on the environment.

In the transportation field, consumers want vehicles that are more fuel efficient—but safe, comfortable and fun to drive. Heavy trucks need to increase payloads within overall vehicle weight limits. Governments are regulating stricter emissions and fuel economy standards. And for renewable energy equipment, reducing mass/weight to reach viable economics presents similar challenges.

Part of the answer to light-weighting lies with new advanced materials. For many applications, new composite materials and processes have opened a world of new solutions.

At the forefront of this technology is the Molded Fiber Glass Companies.

Composites Are Lighter and Stronger Than Ever Before
Recent innovations in nanoparticles, robust carbon fiber designs, and low specific-gravity materials are paving the way for double-digit mass reduction over existing composite components. But mass reduction goes beyond the material—it also involves reducing component volume and material use, as well as consolidating parts into integrated, lighter-weight units.

360˚ View of Mass Reduction—Value Development
What has evolved at MFG is a comprehensive and time-proven collaboration process for working with customers to systematically explore and analyze material and process options for meeting structural, aesthetic and delivery demands of each project—in the context of real cost targets.

At MFG, we call this Value Development.
1. Understand the Project Requirements and Target
2. Analyze the Material, Design and Production Options
3. Present the Best Total Value Solution
4. Support Project from Design to Delivery

Value Development is a multi-disciplined approach to proficiently re-engineer components to be lighter, stronger, more streamlined and cost-efficient.
Material, Design and Process Expertise
Three unique resources are the foundation of MFG’s Value Development process for achieving mass reduction.

**MFG Research**
Upfront collaboration with customer design and engineering teams on materials selection is one aspect of MFG’s Value Development process. MFG Research is the largest and best-equipped R&D laboratory among composites manufacturers worldwide. This resource enables MFG to leverage the intrinsic characteristics of composites technology to achieve improvements in performance, appearance, durability, electrical and/or mechanical properties, development time cycle and cost.

**MFG Design Center**
Design for manufacturability (DFM) is a second aspect in Value Development. The dedicated MFG Design Center provides various levels of engineering support as a value-added resource to customers and to the various MFG entities. Projects sometimes begin at this stage with investigation of a customer’s existing design.

Collaborative design reviews (via online meetings) between MFG and your team optimize composite designs for manufacturability and ease of assembly, quality, cost, and cycle time. MFG can design new parts from customer sketches, evolving them into 3D solids that are ready for manufacturing, or re-engineer an existing part.

**MFG Manufacturing Centers**
World-class composites molding and assembly processes is the third aspect in Value Development. As a one-stop Tier 1 supplier, MFG provides the full-range of composites fabrication—from limited runs with high levels of manual work all the way to fully automated molding and assembly. Plants located around the USA and Mexico allow JIT delivery and minimized transportation expense.

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A Proven Partner to Leading Manufacturers for More than 60 Years.

A pioneer in composites innovation since the industry’s beginning, the Molded Fiber Glass Companies is at the forefront of both the science and the art of composites technology. The company is a recognized leader in the volume-production of high reliability structural and body parts for automobiles, heavy trucks, boats, mass transit vehicles, utility and agricultural vehicles, wind energy blades, solar energy collectors, military vehicles and shelters.

MFG brings a unique capability to the table to help product manufacturers leverage composites technology for mass reduction. MFG is solely dedicated to composites manufacturing—funding materials research, establishing the world’s most complete independent research and testing lab, partnering with suppliers and customers to advance manufacturing excellence, creating a dedicated design center to support customers with design optimization, and building a network of facilities across North America and Mexico for convenient proximity to the customer base.

Call us today to schedule an introductory meeting about how MFG can help you reach your mass, performance, and cost targets. Alex Raffa (800) 456.5263.

Companies Working with MFG

- GE Wind
- Honda
- Chrysler
- American Seating
- Yamaha Motors
- A.L.P. Lighting Products, Inc.
- Highline Products
- Daimler Truck & Western Star (Freightliner)
- GE Locomotive
- General Motors
- Volvo
- BAE Systems
- PACCAR
- E.L. Mustee & Sons
- Scientific Lighting Products

MFG was recognized with the 2009 ACE Award for Process Innovation for demonstrating innovation in manufacturing methods for the Pontiac Solstice Coupe Rear Floor Assembly.

MFG was selected by General Electric as winner of their 2009 Excellence in Lean award. This honor is presented yearly to one supplier for outstanding performance in compliance, quality, Lean, direct material productivity, growth and customer centricity.

In 2008 Yamaha Motor Manufacturing Corporation presented MFG with their 2008 Supplier Excellence Award.