



THERMOSET MOLDING FOR AUTOMOTIVE APPLICATIONS

As an IATF 16949:2016 and ISO 9001:2015 certified custom thermoset molder; Woodland Plastics offers extensive thermoset molding services and expertise to OEMs and their suppliers in the automotive industry. With excellent performance and durability characteristics, lightweighting options, and cost advantages; components molded from thermoset materials such as Phenolics and Bulk Molding Compounds (BMCs) are widely used in a variety of performance and aesthetic-based automotive applications.

PERFORMANCE AND DURABILITY

With a product life cycle potentially spanning up to two decades, automobiles require components that will not disfigure and will remain chemically and dimensionally stable. Some automotive components may also require heat resistance characteristics to withstand high operating temperatures. With heat deflection properties at or above 500F, molded thermosets offer excellent material performance for powertrain and under-the-hood applications without incurring high material costs of similarly high-performing engineered-thermoplastics, such as PPS, Torlon, and CFRPs (Carbon Fiber Reinforced Polymers).

- ▶ Resistance to automotive fluids: oils, fuel, engine cleaner, transmission and brake fluid, power steering fluid
- ▶ Excellent dimensional and chemical stability within rapidly changing environments.
- ▶ Heat resistance and temperature deflection up to and above 500F
- ▶ Low creep and shrink
- ▶ Corrosion resistance



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LIGHTWEIGHTING ADVANTAGES

One of the biggest advantages of implementing thermosets into an automotive application is doing more with less. Thermosets offer a lightweight, low cost option with high performance properties over metal and thermoplastic counterparts.

As automakers and automotive suppliers continue lightweighting efforts for both cost savings and compliance requirements, thermoset materials have become a staple for metal-to-plastic (or metal-to-thermoset) conversions.

- ▶ High strength-to-weight ratio
- ▶ Reduced part weight over metal counterparts
- ▶ Molded-in or post-molded insert options
- ▶ Metal-to-thermoset conversions
- ▶ Ability to consolidate multiple components of an assembly



COST ADVANTAGES

Another very important variable for any new product application is the overall manufacturing costs it takes to bring a product to market. Automotive OEMs and suppliers must offer the best performing product at a competitive price in order to maximize market share. Incorporating thermosets into an automotive product design may offer the following cost advantages:

- ▶ Unrivalled dimensional and chemical stability at its cost per pound price point
- ▶ Eliminated or reduced need for costly secondary operations, ie machining or finishing
- ▶ Longer mold or tooling life span over die cast tooling
- ▶ Lower overall manufacturing costs
- ▶ Excellent moldability

