Dow Automotive Systems introduces a revolutionary epoxy formulation for the RTM process. VORAFORACE 7500 is designed to enable carbon fiber composite component assembly and e-coating in the body shop.

RTM is a closed mold process enabling high-fiber reinforcement content in the final composite. VORAFORACE™ 7500 optimizes key processing properties to produce excellent final composite performance and substantial mass reduction compared to metal solutions.

Meeting OEM emissions and fuel efficiency requirements is a difficult challenge when working with materials such as steel or aluminum sheet metal. Significant weight reduction is possible with low-density carbon fiber composite components that can function alongside traditional metal components in an efficient hybrid construction.

VORAFORCE is ideal for producing large, fiber-reinforced, composite articles integrating glass, carbon or aramid fibers that require rapid infusion and cure times for increased build volumes. Depending on process needs (e.g. high-pressure or low-pressure RTM processes, closed mold or open gap injection), the versatility of VORAFORCE 7500 allows easy adjustment of injection and cure profiles as needed, enabling demold times under 3 minutes.

**Resin Transfer Molding Process**

<table>
<thead>
<tr>
<th>Process requirements (for large volume automotive):</th>
<th>Conflicting resin requirements:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gel time (infusion time) 30-60 sec</td>
<td>Low viscosity and long gel time to fill mold and impregnate fiber mat</td>
</tr>
<tr>
<td>Demold time &lt; 180 sec</td>
<td>Fast cure to reduce cycle time</td>
</tr>
<tr>
<td>Total cycle time &lt; 240 sec</td>
<td>Complete/high conversion</td>
</tr>
</tbody>
</table>

**B-pillar VORAFORCE RTM filling simulation.**
VORAFORCE™ 7500. HIGH THERMAL STABILITY WITH ULTRA-LOW VISCOSITY, EXCELLENT FLOW, EXCEPTIONAL FIBER WETTING AND RAPID IN-TOOL CURE.

VORAFORCE offers excellent mechanical properties, complemented by a high glass-transition temperature greater than 200 °C to boost stability and durability of the composite at e-coat oven temperatures and in service. No post-cure operations are required to achieve these properties.

VORAFORCE 7500 drives and attractive ratio of long gel times and short cure times, maximizing production tool output while maintaining excellent processing flexibility, even for large components. Its ultra-low viscosity reduces filling pressure and clamp force, without sacrificing flow length or fiber wetting, even in parts with high fiber content.

VORAFORCE 7500 can enable body-shop assembly of structural composite components.

ABOUT DOW AUTOMOTIVE SYSTEMS

Dow Automotive Systems, a business unit of The Dow Chemical Company, is a leading global provider of collaborative solutions and advanced materials for original equipment manufacturers, tier suppliers, aftermarket customers and commercial transportation manufacturers. Our materials focus includes structural, elastic and rubber-to-substrate adhesive solutions; polyurethane foams and acoustical management solutions; films; fluids; and innovative composite technologies. Offices and application development centers are located around the world to ensure regionalized technical, engineering and commercial support for customers and industry groups. For additional information, visit dowautomotivesystems.com.

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Dow Automotive systems brings the smart solutions to your composite bonding challenges.

Dow Automotive Systems is also a market leader in adhesive bonding technologies. As the use of lightweight composites and metals has increased, Dow Automotive Systems has developed innovative adhesives that enable much more design flexibility in the use of these materials.

For instance, we’ve pioneered a two-component polyurethane bonding system that links dissimilar materials – especially those with low surface energy – allowing the integration of lightweight materials such as aluminum, glass fiber, aramid, carbon fiber and others into vehicle body design and construction.