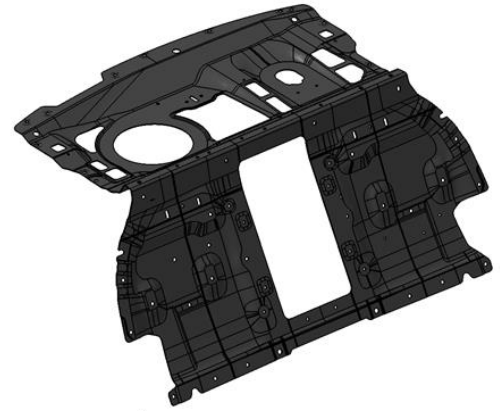


AUDI REAR WALL

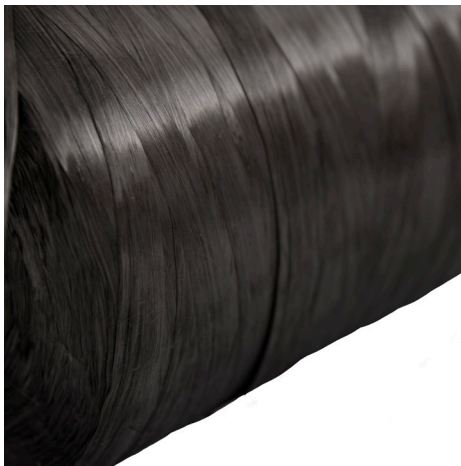
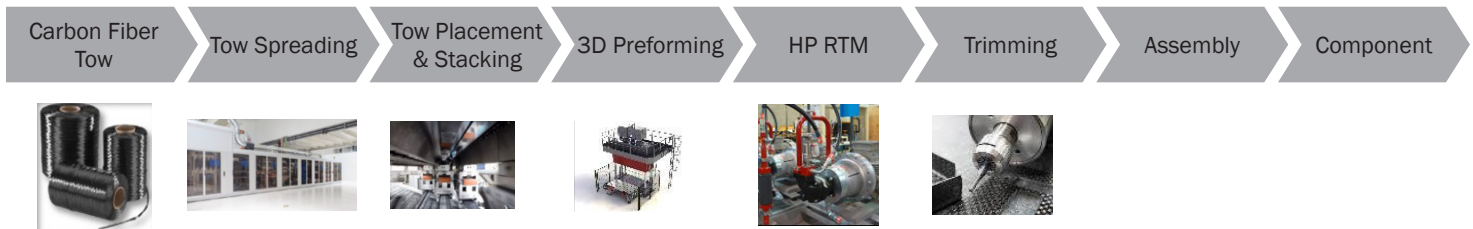
Zoltek partnered with Voith to deliver a carbon fiber reinforced rear wall for the Audi A8. Zoltek PX35 carbon fiber delivers an ideal balance of performance and cost. When used in conjunction with breakthrough technologies developed and implemented between Audi and Voith Composites, an effective part suitable for high volume applications was created. Multiple layers of Zoltek PX35 continuous tow were placed, preformed, and molded in a resin transfer molding (RTM) process with resin supplied by Dow. This approach to part construction resulted in a piece which absorbs transverse and longitudinal loads, as well as, shearing force.



Overall torsional rigidity in the vehicle was increased by 33% due to the addition of Zoltek carbon fiber.

For inclusion in a mass produced vehicle, low-cost, efficient production processes were key. Ultra-RTM Technology was employed which utilized low mold pressure, and resulted in a part produced with a short cycle time. The process was highly automated; thereby, reducing scrap significantly.

FULLY INTEGRATED AND AUTOMATED DIRECT PROCESS AT VOITH



CONTINUOUS TOW (50K)

ZOLTEK's Continuous Carbon Fiber Tow is the premier commercial carbon fiber on the market. It is a 50K filament fiber available in a range of sizings for optimal processing and compatibility with a variety of resin systems.

DNV-GL Approved
Processing Support Available
Spool to Spool Consistency

MATERIAL OVERVIEW	SI	US
Tensile Strength	4,137 MPa	600 ksi
Tensile Modulus	242 GPa	35 msi
Elongation	1.5%	
Electrical Resistivity	0.00155 ohm-cm	0.00061 ohm-in
Density	1.81 g/cc	0.065 lb/in ³
Fiber Diameter	7.2 microns	0.283 mils
Carbon Content	95%	