ASCEND PERFORMANCE MATERIALS

vydyne pa66

AUTOMOTIVE APPLICATION PROFILE

Body Stiffeners and Crash Inserts

We understand that in the automotive industry, you need reliable materials that perform to a higher standard. Ascend offers a comprehensive portfolio of engineered plastics for challenging automotive applications. We work with our customers to achieve the very best from our products. That's why we offer a worldwide support network of application specialists and technical experts. Our material knowledge and expertise in automotive systems can help you improve part performance and reduce material usage and cycle times.

Products Used: **R530H, R533H, R535H, R540H, R550H, R413H, R433H**

Application Description

Made of steel or aluminum, the body in white (BIW) structure accounts for nearly half the total weight of a vehicle. Reducing the mass of that steel or aluminum via downgauging is a major opportunity to reduce overall vehicle weight. But simply downgauging metal can compromise its structural integrity and reduce its ability to absorb vibration or withstand crashes.

Strategically placing body stiffeners or crash inserts within the BIW structure can overcome that challenge while significantly reducing weight and maintaining passenger safety and comfort. These inserts aid in absorbing crash energy and reducing vibration. And in preparation for their use in the BIW structure, these plastics must withstand high temperatures during the e-coating process. That's why Ascend's Vydyne PA66 is the preferred engineered plastic for body stiffeners and crash inserts.

The Vydyne Difference

When used in body stiffeners, Vydyne glass-filled grades help reduce noise, vibration and harshness and improve passenger comfort. For crash inserts, glass-filled and impact-modified Vydyne nylon 6,6 helps absorb energy during a crash and keep passengers safe. Often, body stiffeners and crash inserts are bulky and designed with thick walls to ensure the part is completely filled. Vydyne's best-in-class flow allows you to design parts with thinner walls, thereby reducing material cost, cycle time and part weight. Our simulation experts use state-of-the-art FEA and flow analysis to help you design a part right, the first time.

Benefits

- Light weighting
- Reduced NVH
- Stiffness
- High flow
- High temperature resistance
- Crash energy absorption

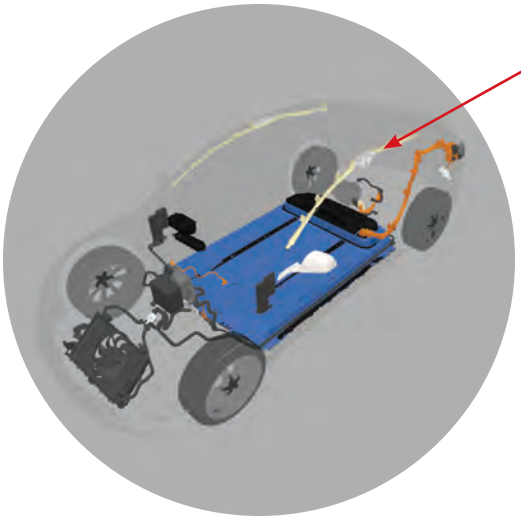

Image provided by A2Mac1 Automotive Benchmarking

Product Properties

R530H, R533H, R535H, R540H, R413H, R433H								
Property*	Test Method	Units	R530H	R533H	R535H	R540H	R413H	R433H
Density	ISO 1183	g/cm^3	1.37	1.40	1.41	1.46	1.21	1.35
Tensile Strength	ISO 527-2	MPa	195	205	210	220	110	148
Flexural Modulus	ISO 178	MPa	9,600	10,200	10,500	12,300	4,800	8,500
Charpy Unnotched Impact Strength	ISO 179	kJ/m^2	75	80	80	90	80	92
Notched Izod	ISO 180	kJ/m^2	11	12	12	14	12	22
DTUL @ 1.8 MPa	ISO 75-2/A	°C	250	250	250	252	235	245

*Dry as molded (DAM)

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Ascend Performance Materials is the world's largest fully integrated producer of nylon 6,6 resin. We manufacture and reliably supply world-class plastics, fibers and chemicals that are used in thousands of everyday applications such as car parts, electronics and cable ties.

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