Heat shield made from Ultramid® Endure

Case Study

The global supplier to the automotive industry Montaplast uses Ultramid® Endure D3G7 for a heat shield in the charge-air manifold used on the 4 cylinder diesel-powered automobile engine from Daimler.

In the air intake region of the charge-air manifold, which features integral exhaust gas recirculation, fresh air and hot exhaust gases are brought together. This is where high mixing temperatures and strong turbulence are encountered. Until now, an aluminum shield provided protection for the wall and a built-in sensor. Now, the heat-resistant plastic Ultramid® Endure fulfills this function. The material easily withstands a continuous service temperature of 220°C and peak temperatures of 240°C. Stabilization technology that creates a protective surface layer on the plastic is responsible for the high heat resistance of this polyamide specialty. Openings in the plastic shield produce a more specific turbulence in the charge air, as in the aluminum part used previously.

The polyamide Ultramid® Endure combines its exceptionally high heat aging resistance with the good processability of PA66 – the characteristic that is the determining factor when it comes to system costs. The material is thus an ideal alternative for applications all around the charge-air system in modern turbocharged engines. Thanks to the design freedom that the injection molded plastic provides, the automotive supplier can address the individual requirements of a vehicle manufacturer specifically.