

PolyOne Solution Boosts Quality and Productivity

A customized polymer compound and improved tool design eliminate part quality issues, preserving business and eliminating 80% scrap rates.

Situation

A leading global plastic parts manufacturer with facilities in Europe, North America, Asia and Africa recently began producing safety belt guides for a sport utility vehicle. The guides, which direct the safety belt from the ceiling to the seat back were produced using insert molding. In this process, a metal insert is placed into the mold before a thermoplastic material is injected around it. For the safety belt guide, the insert consisted of a large metal loop with an anchor point for assembly.

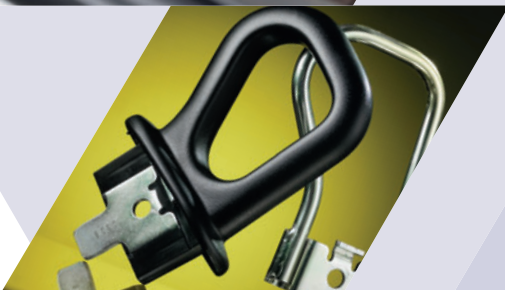
The manufacturer found that as the parts cooled after molding, they developed cracks at the top of the loop that made the guides unusable. Scrap rates on the part were approaching 80%. Defects were attributed to the metal loop, which dissipated heat much faster than the thermoplastic material and accelerated expansion and contraction in the part. To make matters worse, scrap parts could not be economically reground and reused because the guides contained a combination of metal and plastic.

PolyOne developed a specialty compound that would deliver the required level of performance and avoid the defects experienced with the incumbent material.

The PolyOne Difference

Working in close cooperation with the manufacturer, the PolyOne team developed a high-impact polyamide solution that eliminated the cracking problem. In addition, unlike the incumbent material, they were able to modify the material so that the surface appearance was similar to other interior components of the SUV. The PolyOne team also provided recommendations on the mold's design and venting system to assure optimum product quality.

The material solution, a specialty grade of Bergamid™ A70 compound, offers an outstanding balance of properties that meets or exceeds the application's requirements, including high flow for easier processing, excellent impact resistance, high quality surface appearance, long-term aging and color retention.



Delivering a Value-Added Solution

By eliminating part cracking and getting the manufacturer back into reliable production, PolyOne helped this customer maintain its supply position and reputation with the automaker. In addition, by reducing scrap rates from 80% to nearly zero, the manufacturer was able to save over \$25,000 in reduced scrap while also improving the surface appearance of the safety belt guides.

PolyOne offers specialized solutions that are targeted at helping customers meet performance goals, improve production efficiencies, and maximize value in every way possible.

Product choices often vary by region due to differences in regulatory and agency requirements, availability and other key factors. Please contact your nearest sales office for assistance in choosing the right solution for your locale.

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