Allegheny Performance Plastics

SCIENTIFIC MOLDING SOLUTION REMOVES 100% TESTING THROUGH PROCESS CONTROL

PROJECT DETAILS

Customer: Large outdoor consumer products supplier

Industry: Consumer products

Application: Heat sink

Material: Polyphenylene Sulfide (PPS) plastic

Timeline: 8 weeks (from receipt of tool to first article submission, which included substantial work done on the tool for maintenance and adding cavity pressure transducers for process control)

THE OBJECTIVE

Successfully manufacture PPS plastic components to eliminate testing through high levels of process control.

THE CHALLENGE

A large outdoor consumer products supplier had difficulty injection molding, in-house, a highly-filled thermally conductive PPS. Parts were being 100% manually leak tested prior to assembly, adding additional time and cost to production processes at low levels of product reliability.

The customer was seeking a PPS injection molding solution that would not only eliminate ongoing 100% leak testing but also supply ongoing processes with higher levels of product reliability.

Knowing PPS is a very difficult material to process, the customer asked Allegheny Performance Plastics to manufacture PPS plastic components. We eagerly accepted the challenge, knowing we could apply our experience with high-performance polymers, implement process controls utilizing scientific molding and ultimately eliminate additional leak testing.

THE SOLUTION

We proposed a plan to transfer the tools in a fashion that would not jeopardize continued supply. After we submitted our proposal, the customer's engineering, quality and purchasing team visited our facility and were very impressed with our process control technology.

As pioneers in creating polymer components, part of our high-performance plastic testing and analysis capabilities include the use of RJG sensors. These sensors allow a machine to make adjustments within a certain range. The RJG eDART® process control system is the most powerful process control system for plastic component applications and is essential to ensuring high-quality parts are produced cost-effectively.

We put together a full proposal, which included our tooling manager and engineering manager visiting the customer's site to gather as much information as possible about the tooling and the problems with their molding processes, to minimize the timeline and further prevent supply risk. We also proposed to bring the leak testing in-house and do it for them temporarily with the goal of not having to 100% test the components in the future.

THE RESULTS

Our solution supplied the customer initial production quantities on time, and leak testing was completely eliminated after the first production run. Equipping the tools with pressure transducers and our experience with molding PPS ensured ongoing process control and consistency, and we offered the customer additional cost savings opportunities within the part family.

Do you have a molder that has been unsuccessful in high-performance polymer injection molding? Many companies come to us because their previous supplier didn't understand or wasn't capable of processing high-performance polymers such as PPS. We're one of a few companies in the world today that have expertise, proprietary processes and manufacturing equipment to handle complex molding projects that most molders choose to avoid.

Our high-performance polymer solutions make us your one-stop source for custom injection molding and machining across many industries. We work in close collaboration with global polymer suppliers to understand and investigate new and emerging materials and technologies. Design to delivery, we can work with you to reduce costs, weight, and space, as well as improve the functional performance of your end products. View our case studies.

Allegheny® Performance Plastics

3 Avenue A, Leetsdale, PA 15056
412-231-9546
WhatIf@AlleghenyPerformancePlastics.com

CONTACT US