EQUIPMENT MANUFACTURER HEATS UP PROFITS WITH A COOL SOLUTION

CASE STUDY: ONFLEX™ TPE
THE SAVINGS STACK UP WHEN AN EQUIPMENT MANUFACTURER SWITCHES MATERIAL

THE CHALLENGE
This project began with a trusted brand known for excellent quality of home and office equipment. As a market leader, the manufacturer was always looking for new ways to improve efficiency, and pinpointed an opportunity to reduce the processing steps associated with a flexible seal. Made from EPDM rubber, the seal needed to withstand exposure to a harsh environment and last at least 15 years.

In addition, the manufacturer was having supply chain issues, with its molders in China and Mexico changing material supply sources three times in a two-year period. The manufacturer wanted more stability in its material supply chain as well as a molder in closer proximity to the U.S.

The company approached PolyOne with the question: how can we improve our processing and supply chain issues without sacrificing adhesion and chemical resistance of the flexible seal?

THE SOLUTION
Maintaining the highest standards while improving manufacturing steps can be difficult. Working closely with the manufacturer, the PolyOne team recommended customizing OnFlex™ thermoplastic elastomer (TPE) as an alternative to the incumbent EPDM rubber.

One of the notable advantages of TPE is that it processes in a simple, one-step injection molding operation instead of the multiple steps needed for EPDM rubber. The OnFlex TPE is injection molded in seconds, thus saving significant time and reducing cost.

Specifically, the team recommended overmolding the TPE seal onto a glass-filled polypropylene base that would provide the strong adhesion and chemical resistance needed for long-term performance. Switching from molded EPDM rubber to an overmolded TPE would also enable the manufacturer to reduce processing cost, reduce scrap and enable greater design freedom.

This process wasn’t familiar to the manufacturer, so the PolyOne technical team showed engineers how the process could be used to achieve excellent adhesion, then attended molding trials to verify a successful outcome.

THE RESULT
Finding a material that would not compromise the premium quality associated with its brand was critical for the manufacturer. As a reliable supplier with industry knowledge and specialty formulation expertise, PolyOne enabled the manufacturer to win market share by responding quickly with a solution that met the specific requirements of this application.

The PolyOne team worked closely with the manufacturer throughout the project, from material selection to overmolding trials and performance testing to final approvals. This dedicated PolyOne support removed several months from the manufacturer’s product development process, thus decreasing its time to market.

The end result—a better product at less cost.