

Firms push TPE weather seals

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AKRON, OHIO — Advanced Elastomers Systems LP and Trexel Inc. have entered into a long-term, exclusive licensing agreement to develop dynamic sponge/foam automotive weather-seal systems.

The partners aim to break the stranglehold ethylene propylene diene monomer has on much of the vehicle weather-seal market, according to Zev Gurion, AES global automotive marketing manager. EPDM takes as much as 95 percent of the business in developed countries

The pact calls for AES to develop Santoprene thermoplastic vulcanizates to take advantage of Trexel's MuCell microcellular foam process.

"Santoprene TPVs have been used in the transition from EPDM to TPV weather-seal systems for many years, and we now see an innovation potential for overcoming some of the final barriers to broad adoption in dynamic applications," Gurion said.

He said automotive weather seals mainly fall into three categories: static, used as trim, gap fillers and glass encapsulation; semi-dynamic, for such applications as glass-run channels; and dynamic, for more-demanding door, trunk and hood seals.

While working on weather seals for the past 15 years, AES focused most of its attention on static and semi-dynamic seals. The new agreement should change that.

"With the Trexel technology, we have a better chance to penetrate the dynamic seal applications," Gurion said. "That is the big prize here."

Trexel, which boasts patents in a number of countries for its MuCell microcellular process technology, mainly is in the business of licensing the MuCell technology for the production of injection molded and extruded goods. It also supplies the equipment and components integral to the MuCell process.

For two years, Trexel has worked to find the "missing link that would allow TPVs to compete with the established EPDM foaming technology," said President David Bernstein. His firm's process is based on the continuous introduction of small, precise amounts of supercritical nitrogen gas into the molten resin during the extrusion process, enabling stable, high-speed production of foamed profiles with consistent properties and smooth appearance.

Bernstein said his company is small, with about 40 employees, and saw that the application could have broad potential. The firm also realized that each TPV

supplier's material is different, so Trexel wanted to develop the system in an exclusive arrangement with one TPV supplier.

"That led us into discussions with AES, and they also saw the same possibilities," he said.

Gurion said automotive customers should choose the new foamed TPV system over EPDM for several reasons: It gives equal or better performance; it provides a 25-30 percent weight reduction; TPVs are recyclable, a benefit both while making the parts and when the vehicle goes out of service; and the TPVs can be made in color to help in design aesthetics.

AES and Trexel have had good feedback from potential customers so far, according to Gurion. While the focus is on dynamic seals, some customers may opt for the foam seals in less-demanding applications, so a general systems and support package will be available as well.

Gurion and Bernstein have high hopes the partnership will yield high dividends. Gurion expects some primary seals to be on vehicles within five years, given development and approval cycles.

"By a factor of many times, this may be the largest and best extrusion application ever developed [for foamed TPVs], and has the potential to generate much business," Bernstein said.