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Infiltrator Advances Sustainability Goals by Optimizing Recycled PP Quality & Performance with Milliken's DeltaMax™ Modifier

Spartanburg, S.C. - To advance its sustainability strategy, Infiltrator Water Technologies has adopted DeltaMax™ technology from Milliken & Company's Chemical Business. The company, a market leader in onsite wastewater treatment, is using DeltaMax Performance Modifier to optimize the quality and performance of recycled polypropylene (rPP) used to injection mold its Quick4® Series of septic chambers. Infiltrator faced challenges in obtaining satisfactory supplies of rPP, which was frequently mixed with post-consumer polyethylene (PE). By incorporating DeltaMax™ m100 Melt Flow Modifier to improve impact resistance and melt flow rate (MFR), which can degrade during recycling, Infiltrator has experienced improved product performance as it relates to brittleness and increased the percentage of rPP used in septic chamber production to promote circularity.

Milliken will display Infiltrator's septic chambers made with DeltaMax Performance Modifier at its booth (#A700) at Compounding World Expo North America, Nov. 3-4, in Cleveland, Ohio. The event is co-located with Plastics Recycling World Expo, Plastic Extrusion World Expo and Polymer Testing World Expo.

"As a company focused on sustainability, we have always used recycled materials," said Dave Smith, purchasing manager, Infiltrator. "But when we faced new issues with recycled PP, including lack of post-industrial content and greater lot-to-lot variation in post-consumer content, we found traditional additives were not up to the challenge. Based on previous collaborations with Milliken, we tried the DeltaMax technology and achieved impressive results. This performance modifier allows us to purchase a broader range of recycled PP, increase the yield from each load of material and deliver a better product to our customers."

"Many converters and manufacturers are turning to recycled plastic as part of their environmental initiatives," said Emily Blair, global product line manager, Milliken & Company. "But successfully incorporating recyclate - especially post-consumer content - can be a complicated undertaking, with many variables. That's why the right additive is so important. Our DeltaMax technology, which was developed specifically for virgin and recycled polypropylene, is allowing Infiltrator to expand its sustainability efforts while ensuring excellence in production and in the field."

Improving Melt Flow and Impact Resistance Simultaneously

Infiltrator's recycled plastic septic chambers are engineered for strength and performance, are easy to install and have greater design flexibility (including a smaller footprint) as compared with stone and pipe. Melt flow and impact performance are critical properties in the manufacture and installation of these chambers, which are used in the leachfields of residential (and some commercial) septic systems. These 4-ft.-long, semicircular parts with complex geometries require a high MFR for complete mold filling and rapid throughput. Contamination of rPP with discarded PE can negatively affect production speed and part quality. Milliken's DeltaMax m100 melt flow modifier increases the MFR of rPP by up to three times while maintaining impact properties.

In the field, Infiltrator's septic chambers must withstand installation in leachfields using heavy equipment, with the potential for breakage. The use of DeltaMax Performance Modifier allows Infiltrator to open up its recycled material streams and maintain product performance in the challenging field construction environments. The rate of field failures due to brittle behaviour has been reduced by roughly 90% after moving to DeltaMax from the incumbent additive.

The Milliken technology boosts impact resistance and acts as a compatibilizer between the functional groups of the impact copolymer to prevent delamination and improve impact performance. As a result of these improvements, Infiltrator has been able to increase the percentage of rPP in its septic chambers to more than 80 percent, and also obtain a greater yield from each bale of recycled content.

Smith noted, "Our manufacturing team has high confidence in DeltaMax based on the excellent results we are seeing. Equally important, our customers are pleased with the increased durability of our septic chambers, even under temperature extremes and other harsh field conditions. Thanks to our collaboration with Milliken, we are achieving our processing and performance goals for recycled PP while strengthening Infiltrator's sustainability posture." Currently, Infiltrator is working with Milliken to investigate other high-performance additives with the potential of increasing dimensional stability of the Quick4 septic chambers.

About Milliken

At Milliken & Company, we harness our materials science expertise to deliver tomorrow's breakthroughs today. Drawing on thousands of innovative patents and a portfolio with applications across the textile, flooring, specialty chemical, and healthcare businesses, we create products that enhance people's lives and deliver solutions for our customers and communities. Across the globe, we rally behind a shared sense of integrity and excellence as we strive to positively impact the world for generations. Discover more about our curious minds and inspired solutions at milliken.com.

About Infiltrator Water Technologies

Infiltrator Water Technologies is a leading manufacturer of products for the water and wastewater industries. For over 30 years, the company has been manufacturing a variety of innovative and environmentally friendly alternatives to traditional pipe and stone leach field and concrete septic wastewater components. The company sells its products through wholesale distribution across the United States and Canada, for use on properties with on-site wastewater treatment systems. Infiltrator is a leader in the use of post-consumer and post-industrial recycled plastics in the manufacturing of its products. Infiltrator is a wholly owned subsidiary of Advanced Drainage Systems. To learn more about Infiltrator, please visit the company's website at www.infiltrator.com/about.

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