ExxonMobil
Signature Polymers

Case Study

Exceed™ Stiff

Rotomolded PE tanks can deliver sustainability benefits by increasing the incorporation of post-consumer and post-industrial recycled content while maintaining tank performance and quality

Incorporation of recycled content

High gloss

Visual appeal

Challenge

Increase the incorporation of recycled content of large rotomolded PE tanks while maintaining tank performance and quality

Polinter, a 100% Colombian-owned company serving the local construction, institutional, industrial and agricultural sectors, wanted to help contribute to a more circular plastic economy by helping to improve the sustainability benefits of its large (500 to 2,000 liter) rotomolded polyethylene (PE) tanks.

For several years, Polinter has been incorporating post-consumer recycled (PCR) and post-industrial recycled (PIR) content in their rotomolded products. The company wanted to increase the incorporation of recycled content in its large tanks, without compromising the quality or the original mechanical properties and brightness of the tanks.

"For Polinter, it is becoming important that we improve our contribution to the plastics circular economy by increasing our use of PCR and PIR content in our large rotomolded products," said Edgar Romero, General Manager, Polinter. "It can help us make an increasingly positive impact on our plastic footprint in the region which is essential to remaining competitive."

Solution

Exceed™ Stiff m 4536 can allow the incorporation of increased recycled content in large rotomolded PE tanks

Polinter worked with Channel Prime Alliance International (CPAI), an ExxonMobil strategic partner, on the development of a new formulation. The technical depar™ent of CPAI recommended replacing regular butene and hexene LLDPE with Exceed Stiff m 4536 metallocene PE.

Exceed Stiff m 4536 was dry blended with the recycled content for incorporation in the outer layers and was used at 100% for the inner layers of the tank.

"The percentage of Exceed Stiff m 4536 used in the outer layers will depend on the quality of the recycled stream," said Juan Fernando Rojas, senior technical development, Channel Prime Alliance International (CPAI). "If the quality is poor, the amount of Exceed Stiff m 4536 will need to be increased."

CPA INTERNATIONAL a RAVAGO Company

POLINTER Calidad y Confianza

Results

High-quality tanks with increased incorporation of recycled content that can offer lower costs and reduced cycle times

Polinter reports that its use of Exceed™ Stiff m 4536 metallocene PE in large (500 to 2,000 liter) rotomolded tanks has enabled them to increase the percentage of PCR and PIR incorporation without any negative impact observed on its tanks, while the original mechanical and optical properties are maintained. Polinter also reported lower production costs and reduced operation cycle times for rotomolding its large tanks.

Edgar Romero notes, "Using Exceed Stiff m 4536 has allowed Polinter to expand its business opportunities with products that can deliver sustainability benefits. The company can now better compete with large multi-national rotomolding factories."

Tank with C6 LLDPE and usual percentage of PCR and PIR incorporation (opaque with dull appearance)

Tank with Exceed Stiff m 4536.PA and higher percentage of PCR and PIR incorporation (better gloss and final appearance)

Tank with Exceed Stiff m 4536.PA and usual percentage of PCR and PIR incorporation (highest gloss and best final appearance)

Contact us for more information: **exxonmobilchemical.com/pe**

ExxonMobil Signature Polymers

Bring your impossible

What's new: ExxonMobil Signature Polymers

All our polymers are now positioned under a single portfolio brand: Signature Polymers. The aim is to simplify our product architecture and naming to improve portfolio navigation for you. We would like to stress that our commitment to high quality products remains the same, it is the names that change. Everything else remains the same. We will be making these modifications over the next six months so you will see both old and new grade names highlighted during that time.

Here's a quick overview of brands and grade names that have changed in this document:

Legacy Commercial Name	New Commercial Name
Exceed™ 4536	Exceed™ Stiff m 4536

Some of our existing Exceed, Achieve, Paxon and premium PP/HD grades have moved to Exceed brand; most existing Enable grades have moved to Exceed Flow[+]; most of our existing Exceed XP grades have moved to Exceed Tough[+]; most of our existing Exceed S grades have moved to Exceed Stiff[+]. More details here **https://www.exxonmobilchemical.com/en/brands/signature-polymers/exceed_high_performance_polymers** or contact your ExxonMobil representative to know more.

Want to see what's changed in our portfolio? Go to exxonmobilchemical.com/sptransform