ExxonMobil
Signature Polymers

Case study

Exceed™ Stiff+

Videplast collaborates with ExxonMobil Signature Polymers to create high performance, downgauged, mono-material PE pet food packaging

Designed for recyclability*

Potential cost savings

Downgauging opportunity

Data and results presented herein apply specifically to the noted application under this case study.
Your results may differ depending on factors such as operating conditions, equipment and materials used.

Challenge

Videplast, a converter located in the Santa Catarina state of Brazil, was looking to provide its customers a competitive advantage in performance and cost. Their challenge was to create pet food packaging that maintains stiffness and toughness in a mono-material solution at a lower gauge and with cost savings opportunities. The solution would be compared to a mono-material solution at a thicker gauge used to replace PET-based solutions.

Part of the challenge the company was embracing was achieving mechanical properties, printability and aesthetics that match PET-based solutions at lower gauges. PET provides excellent stiffness and dimensional stability, while PE is softer and more flexible, which can affect packaging integrity and machinability. PET has a smooth surface ideal for high-quality printing whereas PE may require surface treatments (e.g., corona treatment) to achieve similar print quality.

Solution

The development of the new form, fill and seal (FFS) film was carried out through a strategic partnership between Videplast, Haver & Boecker and ExxonMobil, applying state-of-the-art technology to meet strict mechanical, aesthetic, and design requirements.

After defining the optimal material architecture, advanced laboratory tests were conducted to validate the performance of the selected resins (Exceed™ Stiff+ m 0926 for stiffness/toughness balance and Exceed™ Stiff+ m 0238 for stiffness and processability).

In the extrusion stage, the structure was produced via multilayer coextrusion using exclusively high-performance polyethylene, ensuring thickness uniformity, operational stability, and excellent processability, even with material reduction. Next, the film underwent high-performance flexographic printing, fully leveraging the surface properties of the resins to achieve superior ink adhesion and premium visual quality. Finally, lamination, alignment, and precision rewinding steps ensured mechanical strength, print protection, and dimensional accuracy, resulting in FFS rolls ready for use in automatic filling and sealing lines.

Leandro Vieira, Application Engineering Coordinator at Haver & Boecker, noted that "For Haver & Boecker, the FFS system represents a breakthrough in productivity, reaching up to 2,400 bags per hour in the pet food segment. Beyond speed, it delivers up to 20% savings in packaging costs, greater operational autonomy, and superior product quality. Logistics also benefit from more stable pallets and optimized space usage. FFS adds value from production to the end consumer, enhancing competitiveness and product presentation."

*Designed with features intended to support recyclability. Actual recyclability depends on factors such as local collection, sortation, and recycling infrastructure, as well as the condition and configuration of the package after use. However, access to facilities that accept and process plastic film is limited and not widely available.

HAVER & BOECKER

VIDEPLAST

Results

The use of ExxonMobil Signature Polymers was a key enabler to reduce the thickness of the FFS film from 180µm to 160µm while maintaining the performance levels demanded by the market. This optimization delivered direct economic benefits through lower raw material usage, and increased productivity. The new configuration made the solution more competitive in cost-sensitive markets and more attractive to customers, prioritizing raw material efficiency, opening opportunities in new markets and applications, including exports to regions with stringent technical requirements aligned with circular economy practices. Enzo De Nardi, Director, Videplast, stated, "This advancement strengthened the company's positioning and expanded its portfolio of high-value-added solutions."

He continued, "In addition to the mechanical and optical performance provided by ExxonMobil Signature Polymers, the decision was driven by strategic factors that ensured the project's success. There was strong synergy between ExxonMobil technological solutions and Videplast's production capabilities, particularly in the extrusion and printing of PE/PE structures. ExxonMobil Signature Polymers acted as a technical partner from the outset, assisting in grade selection, formulation development, and film structure configuration, while also providing design recommendations and test support to optimize processability and efficiency. Supply reliability, local presence, and deep supply chain expertise were also decisive. Furthermore, alignment with design goals — including film downgauging without compromising quality — reinforced the partnership as a strategic choice to deliver a technically robust and competitive product designed for recyclability.*"

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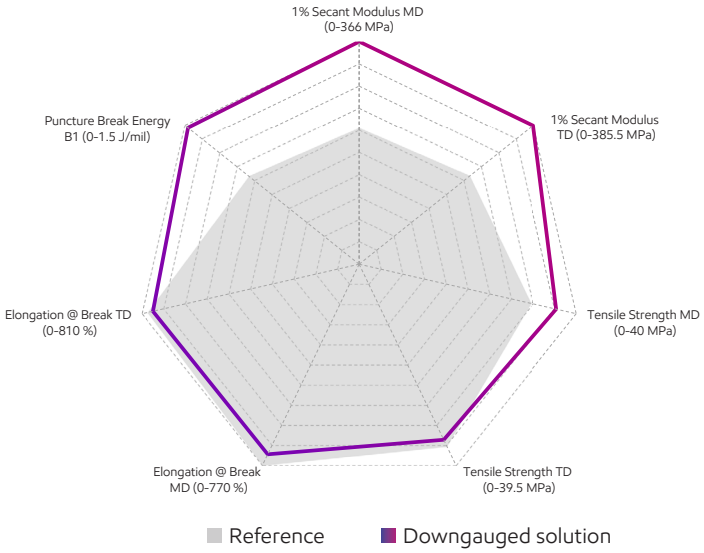
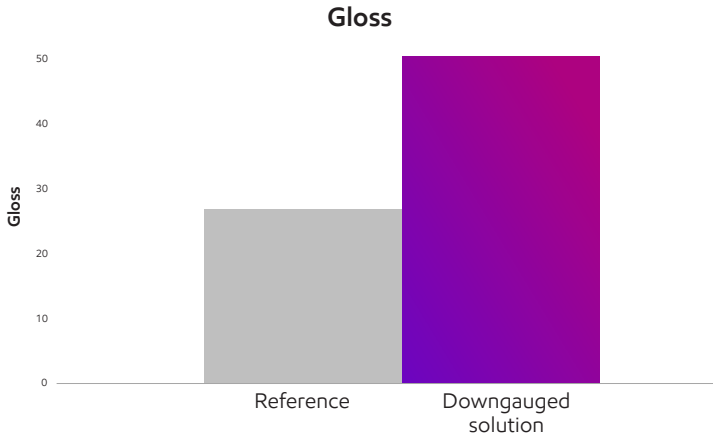
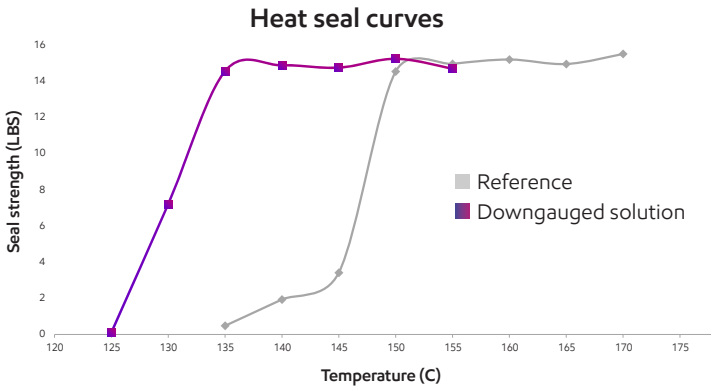
Data from tests performed by or on behalf of ExxonMobil







Data from tests performed by or on behalf of ExxonMobil

ExxonMobil Signature Polymers

Bring your impossible

ExxonMobil Signature Polymers was born from the belief that people fuel progress. From automotive and construction to packaging, agriculture, industrial, and beyond, we leverage the scale and reach of ExxonMobil to deliver the insights and innovations that empower our diverse, global partners to take their businesses to new heights. We continuously work to provide the listen-first, service-driven, game-changing collaboration that unlocks opportunities for our partners and advances their business goals.

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