



Exceed™ Tough+ Exceed™ Flow Exxtra™ Seal

Innovative non-laminated PE stand-up pouch designed for recyclability*



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

Today, the Chilean government is demanding that the nation's industry develop and introduce more sustainable flexible packaging solutions by 2025. One focus is on packaging solutions which are recyclable or use recycled plastic so that valuable resources are kept in the manufacturing loop longer and waste is reduced.

Stand-up pouches (SUPs) have traditionally created a challenge for recycling because they are often complex laminated structures comprised of different materials, such as PE//BOPET or PE//BOPA, which can be difficult to separate.

Winpack group, a major converter based in Chile, wanted to change that, so they turned to the ExxonMobil Signature Polymers team to help deliver an innovative solution for a full polyethylene (PE) non-laminated SUP to package frozen fruit.

Solution

Winpack group collaborated closely with ExxonMobil Signature Polymers to develop an innovative non-laminated PE SUP designed for recyclability* that would meet the country's growing demand for sustainable solutions, while delivering the performance and protection products need. The result is the first full PE non-laminated SUP to be made commercially available by Solpack Chile, one of Winpack's companies, in the LAMEX region. Full PE SUPs can be easily recycled where programs and facilities to collect and recycle plastic films exist.

"We have worked together with the ExxonMobil Signature Polymers on other successful packaging film applications in Chile. Plus, they have collaborated with Solpack, our sister company in Peru, so we knew that this relationship would develop innovative solutions," said Salustra Solarte, Development Manager, Winpack group. "By combining their technical expertise, laboratory analysis and polymer innovation with our converting and application know-how we delivered the right product for this market."

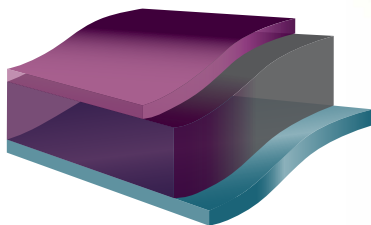
*Designed with features intended to support recyclability. Actual recyclability depends on factors such as local collection, sortation, and recycling infrastructure, as well as the condition and configuration of the film after use. However, access to facilities that accept and process plastic film is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

One of the biggest challenges that had to be overcome was the heat encountered in the SUP assembly line. One of the reasons conventional structures use BOPA or BOPET substrates laminated with PE is to provide the heat resistance required to prevent the film sticking on the sealing bars. In this full PE SUP, heat resistance was provided by combining the right PE film with a special coating.

Results

Following a period of development and testing, the final film formulation for the non-laminated PE SUP is a 3-layer (1/2/1) structure designed for recyclability*. The structure works as a non-laminated solution by having a higher density in the outside layer and core. The toughness, sealability and optical properties required for the SUP are delivered using Exceed™ Tough+, Exceed™ Flow and Exxtra™ Seal performance PE resins. Exceed Tough+ is specifically used to boost mechanical properties.

- A. Exceed Tough+ m 0518.ML
Exceed Flow m 0535.MC
- B. Exceed Tough+ m 0518.ML
HDPE
- C. Exxtra Seal m 1012.MK



"This innovative recyclable pouch has been developed to meet Chilean market needs in 2025, but we believed it was important to have it available today. It is our first full PE non-laminated SUP to be made commercially available in the region and there has been a great deal of interest from our customers. We are convinced it will deliver value to our business through new market opportunities and increased sales."*

**-Cristian Basaez, Development & Innovation Director,
Winpack group.**

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