

FCO Group Brazil presents a diversified and sustainable portfolio to the North American market, including 100% recyclable High Barrier Thermoforming Films.

The Brazilian **FCO Group**, which operates eleven plastic packaging converting plants and one logistics unit, is going to present its line of sustainable films and packaging products during the next edition of IPPE 2024 (International Production and Processing Expo) in Atlanta.

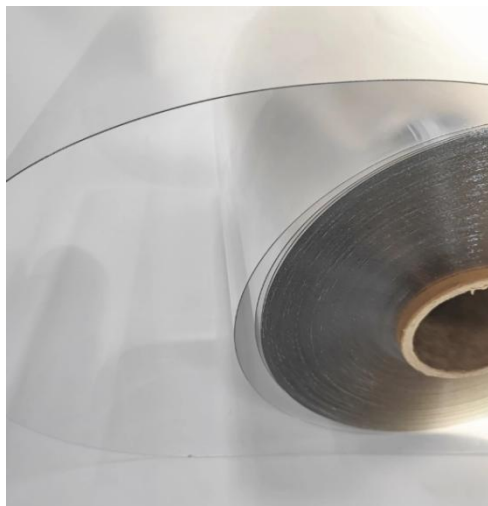
Among our diverse range of engineered technical films and bags, we highlight the following packaging solutions:

HIGH AND MEDIUM BARRIER BOTTOM FILMS

Glass TF Film, 9-layer medium or high barrier coextruded flexible plastic film mainly used in the thermoforming process of food packaging manufactured using state-of-the-art **water-quench blown film line**. It extrudes downwards and uses water instead of air as cooling system. The use of water allows extremely fast cooling of the melt, a low degree of crystallization and an extremely amorphous film structure. The result is a film with a striking gloss, high transparency and excellent puncture and tear resistance.



Semi-rigid bottom film; APET semi-rigid sheet thermo-laminated with **PE/Evoh/EVA** for sliced salami, cheese and other portioned products:



HIGH AND MEDIUM BARRIER NON-FORMING LIDDING FILMS

Lidding Films, flexible coextruded and/or laminated mono and multi-material barrier flexible films in several options, clear or flexo-printed film:

- Mono-material: PE/Evoh/PE laminated with MDO/PE (max. 5% EVOH)
- Multi-material: PA/Evoh/PE laminated with flexo-printed BOPP / BOPET
- Multi-material: PA/EVOH/PE clear film
- Reclosable: PA/Evoh/PE laminated with BOPET (or sealant layer in PET)



Laminated Barrier Film



High Barrier Glass Film



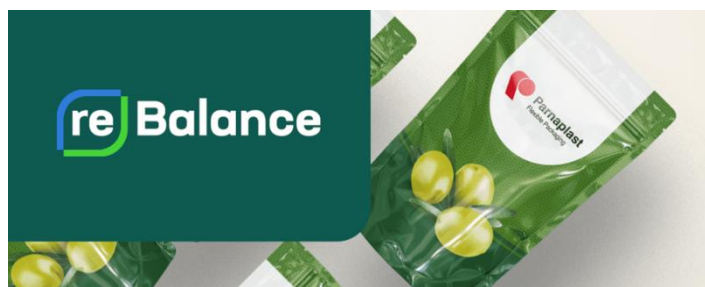
Reclosable Barrier Film

HIGH AND MEDIUM BARRIER SUSTAINABLE FILMS

In-cycle, a 100% recyclable **high barrier** flexible film, using compatibilizer polymers, to ensure its recyclability within the PE recycling streams. **In-cycle** film is a coextruded (9-layer) multi-material structure, which offers excellent optics such as brightness and transparency, particularly for the vacuum filling process and provides a very good mechanical resistance.



Re-balance, a 100% recyclable **high barrier** flexible film, designed to contain up to 5% of EVOH, to ensure its recyclability within the PE recycling streams. **Re-balance** film has a coextruded structure up to 9 layers and can be laminated with MOPE, offering excellent optics such as brightness and transparency for the vacuum (or MAP) filling processes and is available in different formats like: rollstock films, bags, pouches, and others.



All the above indicated films and packaging are produced by our subsidiary company **PARNAPLAST** in Brazil:



PARNAPLAST

Medium and High Barrier Flexible Film / Bag



By Material

- PE and PP resins
- Evoh and PA and tye-layers
- Special Additives
- BOPET/BOPP laminates



By Product

- Forming and non-forming films
- Cook-in structures
- Pre-made bags (printed & unprinted)
- In-cycle (R2R) and Rebalance Sustainable Films

By Application

- Forming and non-forming films
- Cook-in structures
- Pre-made bags (printed & unprinted)
- In-cycle (R2R) and Rebalance Sustainable Films

By Technology

- Coextrusion Blown (7 & 9 layers)
- Water Quenching – AQUAREX (9 layers)
- Evoh: minimum 2 micron-thick

Our **Group (FCOGroup)** has also innovated in the animal nutrition packaging by launching the **ST only-one** film:

ST only-one films and packaging, made from 100% recyclable High Barrier Mono-material and developed using innovative technologies that generate added value for products and their brands. The structure of **ST only-one** packaging consists of a single polymer chain that, when laminated using a coating (an exclusive FCO Group technology) produces high barrier packaging that is resistant to odors, oxygen, and grease, thereby preserving the specific characteristics of food products. **ST only-one** packaging is printed, sealable, resistant to impacts and tearing and can be 100% reincorporated into the PP and PE recycling streams.

Main characteristics of the barrier incorporated into ST only-one packaging:

- **OTR** values between 50 and $\leq 1 \text{ cc/m}^2/24\text{h}^*$ (as required by the product)
- **WVTR** $\leq 2.0 \text{ g/m}^2/24\text{h}$
- **Grease** $> 168 \text{ h}$ (ASTM F119/2015).

Available ST only-one structures:

- 100% PE
- 100% PP
- 100% MOPE (applied to packaging's external face)
- 100% MOPP (applied to packaging's internal face).



As a plastic converting company, our broad portfolio of products also includes the following films in rollstock films:

MOPE film, a polyethylene film with improved efficiency, produced using special resins in a high-tech process that consists of stretching the film up to a total ten times immediately after extrusion. MOPE film offers a high-level barrier against moisture and characteristics of brightness and rigidity that are extremely similar to BOPET and BOPP, which thereby allow these films to be replaced by MOPE in a variety of applications. FCO Group's MOPE films are available in mono structures or laminated with PE versions, thereby creating recyclable packaging and allowing downgauging. In addition to oriented Polyethylene films, the **FCOGroup** has a solution of Polypropylene **MDO** with high brightness and high rigidity, produced in a blown process, suitable for applications in self-adhesive labels, press sensitive label and refrigerated labels.

CPP Films are coextruded using a five-layer extruder and produced from polypropylene blends that guarantee a high level of sealability at low temperatures like 80C. These films offer excellent visual characteristics such as brightness and transparency, stiffness, and a consistent moisture barrier.

Stretch PCR, Stretch PCR, a film made with 50% to 70% Post-Consumer Recycled content resins, especially designed for hand & automatic application.

For our Group, to participate at **IPPE Atlanta 2024**, constitutes in an important opportunity to show our technology and latest product developments and innovations. We will be present at this show, which will take place in Atlanta from Jan 30th to Feb 01st, together with our subsidiary companies: **PARNAPLAST**, **PLASZOM** and **GDM PLASTICS**, and our booth is located in the **Bulding B - Pavilion Red Hall, stand B-40071**.

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