



Exceed™ Tough+

Vistamaxx™

Helping to improve palletization logistics using stretch hood at Tiong Huat



Energy savings



Improved process safety



Improved productivity



Better optics



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

Tiong Huat Rubber Factory Sdn Bhd (Tiong Huat) is one of Malaysia's leading manufacturers of high-quality natural rubber and their products are exported to more than 100 countries across the world. The manufactured rubber bales are arranged on pallets and shrink hood is applied to help secure the items for shipping and storage.

Using shrink hood for palletization has a few potential drawbacks:

- Heat energy is needed to shrink the film manually.
- A relatively thicker film is needed to withstand the heat.
- Additional time is needed to complete the wrapping process.

Mr. Low, Director of Tiong Huat, shared the challenges that the company was facing, "We were seeing increasing costs and bottlenecks at the end of the packing line due to contributing factors such as labor shortage, lengthy packing time and high consumption of packing materials. Also, safety of our employees continues to be a key to Tiong Huat."

Solution

Thong Guan Industries Bhd (Thong Guan) specializes in plastic packaging production that encompasses stretch film, flexible packaging, food wrap, additives and food and beverage (F&B) manufacturing. Newton Research & Development Centre Sdn Bhd (Newton) is a research and consulting firm that focuses on load safety through testing, analysis, and material optimization. ExxonMobil had previously collaborated with both companies in developing innovative solutions formulated with ExxonMobil performance polymers.

In this latest collaboration, ExxonMobil provided a solution based on its performance polymers intended to enable Thong Guan to produce thinner stretch hood film to potentially replace existing thicker shrink hood film in use at Tiong Huat. Newton's testing confirmed the new, thinner stretch hood films were able to secure more than a ton pallet load with no compromise on load stability and other mechanical properties.

Ms. Samantha Ong, Senior Manager of Thong Guan, shared, "Tiong Huat was facing challenges in their end-of-line packing and hence we proposed stretch hood as a solution to help improve their packing process."

Ms LC Ooi, Head of Newton, who was part of the group working on the project said, "The client shared the same vision and mindset for a solution that offered the use of less material through downgauging."



Results

Exceed™ Tough+ m 0512 metallocene polyethylene was selected due to its mechanical properties such as good holding force, puncture resistance, and low haze. With its excellent melt strength, Exceed Tough+ m 0512 metallocene polyethylene also helped in the film converting process which required excellent bubble stability to achieve a uniform thickness profile for consistent hooding operation. Vistamaxx™ 6102 performance polymer was incorporated into the formulation to help enable an improvement in elastic recovery and tear propagation resistance. The result was a stretch hood film that is a mere 120µm which conforms tightly to the pallet, compared to 230µm for shrink hood films.

The following benefits were reported by the customer when this new stretch hood film was put into use by Tiong Huat to wrap their palletized rubber bales:

- **Enhanced palletization productivity by 100%.** More pallets were wrapped within the same time by avoiding the shrink heating phase with less manpower.
- **Reduction in the amount of film used per pallet by approximately 50%.** Stretch hood uses less packaging material as it is lighter and thinner, resulting in potential cost savings.

Improved process safety due to the **elimination of gas heating** on shrink hood.

- **Smoother palletization operation** with consistent hooding performance, thus leading to improved productivity.
- **Better presentation** without folds and haziness.

With the new solution, the rubber bale products are not exposed to heat during the packing process, which can help protect the integrity of the rubber bale products. In addition, the stretch hood film is not expected to stick to other plastics that may be used in primary and secondary packaging for the pallet contents which is an important consideration for other pallet types.

“Working with Thong Guan and Newton to understand the needs of customers like Tiong Huat and potential solutions for those needs, we were able to leverage ExxonMobil’s performance polyethylenes to provide a solution that supported the conversion of the incumbent thicker shrink hood into an alternative solution that enabled a much thinner stretch hood that can offer consistent hooding performance. Rising labor cost and lack of available manpower is a challenge for all industries, not just rubber. Automation using stretch hoods can offer a potential solution to help address these challenges,” said Nicholas Yap, Market Development Manager of ExxonMobil Chemical Malaysia Sdn Bhd.



Shrink hood



Stretch hood

Contact us for more information: exxonmobilchemical.com/pe

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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™ XP 7052	Exceed™ Tough+ m 0512

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](https://www.exxonmobilchemical.com/sptransform)