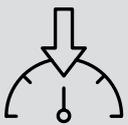




Exceed™ Tough+

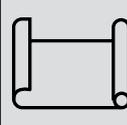
Napco employs thinner heavy duty sacks (HDS) that can offer excellent bag drop performance and creep resistance



Downgauging
for less
material usage



Excellent
bag drop
performance



Creep
resistance
maintained



Easy to
process

Challenge:

Develop Heavy Duty Sacks to pack petrochemical polymer resins as thin as 105µm

Napco National, a leading manufacturer of plastic and paper packaging solutions based in Saudi Arabia, wanted to downgauge its films used for Heavy Duty Sack (HDS), to provide a solution that offers the sustainability benefits of using less packaging material while lowering the weight of the packaging being transported for petrochemical manufacturers.

“Downgauging HDS films from our existing 125µm thickness posed two-fold challenges. First, the thinning down threatened the creep resistance, a major requirement for load stability during stacking, storage, and transportation. Second, the formulation adjustment to deliver acceptable creep resistance can adversely affect the bag drop performance,” explains Wissam Akiki, General Manager of Napco Modern Sacks. “First-rate technical support was needed to help develop a formulation that would allow downgauging, while providing the required creep resistance and bag drop performance,” adds Akiki.

Napco wanted to gain a market advantage as the first packaging company in the Gulf Cooperation Council (GCC) to offer downgauged HDS, which are primarily used by petrochemical companies for polymer resins.

Solution:

Exceed™ Tough+ performance polyethylene for thinner HDS while maintaining creep resistance and bag drop performance

Napco National, the world’s largest supplier of petrochemical packaging, collaborated with ExxonMobil’s polyethylene (PE) business, a leader in driving innovative polymer design. The strength of ExxonMobil’s PE technical support—including formulation design and testing—together with Napco National’s 70-years of manufacturing expertise in film conversion, were crucial to the development of a new HDS film formulation.

When reference HDS films are downgauged, higher amounts of high density polyethylene (ExxonMobil™ HD) usually must be added to manage creep resistance, but this often negatively impacts bag drop performance.

So, ExxonMobil recommended a new formulation that included Exceed Tough+ performance PE and ExxonMobil HD. The synergy between Exceed Tough+ and ExxonMobil HD provides opportunities to downgauge the film, deliver excellent bag drop performance and maintain creep resistance.

Results:

Thinner HDS enable new business opportunities

Used for 25kg polymer resin sacks, the new 105µm film – which includes Exceed™ Tough+ – replaces the existing 125 micron film, which is based on LLDPE. The ability to downgauge the new film by more than 15% is due to the synergy between Exceed Tough+ and ExxonMobil™ HD. The film exhibits excellent creep resistance and maintains bag drop performance, which are both critical for load stability, safety and product protection during stacking, storage, and transportation.

“Initially, we thought downgauging an HDS film as low as 105 microns was virtually impossible, as creep resistance and bag drop performance would be jeopardized,” said Mr. Issam Chaaya, Vice President Petrochemical accounts at Napco National. “But, by working together, we have created a differentiated HDS solution, which is at least 15% thinner than the existing HDS. With load stability, safety and product protection maintained, we believe the new downgauged solution provides enormous business opportunities with petrochemical companies in the region.”

Resulting potential benefits

 Comparable pallet stability	<ul style="list-style-type: none">▪ Tested in open yard during peak summer in KSA
 Comparable bag drop performance	<ul style="list-style-type: none">▪ Better dart impact
 Smooth machinability	<ul style="list-style-type: none">▪ Tested in bagging line up to 2700 bags/hour speed▪ Good bending stiffness
 Comparable strength & durability	<ul style="list-style-type: none">▪ Better creep resistance, load stability, and puncture resistance
 More meters per roll	<ul style="list-style-type: none">▪ Reduced changeover time▪ Less space for storage of rolls

This chart depicts a comparison of downgauged 105 micron film with existing 125 micron film.

ExxonMobil
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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 and business goals.



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What's new: ExxonMobil Signature Polymers

All our polymers are now positioned under a single portfolio brand: ExxonMobil 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	Exceed™ Tough+
ExxonMobil™ HDPE	ExxonMobil™ HD

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)