

# Help engineers protect their structures using eXtreme Performance liners

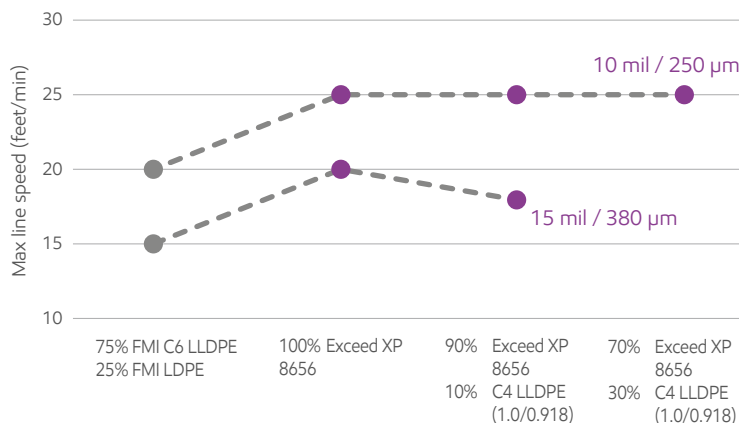
Energy lives here™



Exceed™ XP performance polymers offer a new benchmark for dart impact resistance in construction class-A<sup>(1)</sup> and other highly demanding solutions that require eXtreme Performance. This new product portfolio enables converters to fabricate extremely-damage resistant film which can improve the ability to protect and preserve buildings for potential improved energy efficiency and safety.

Delivered attributes	Derived benefits and potential value
• Exceptional melt strength	• Higher extrusion output • Options for thicker liners while retaining performance
• Extreme dart impact resistance	• Surpasses water vapor retarders standard specification class-A <sup>(1)</sup> • Durability for extreme damage resistance • Options to tailor cost-performance solutions with linear PE blends • Options to tailor toughness/barrier balance via optimized formulations
• Enhanced flexibility and sealability	• Efficient installation for builders

## Liner output



**Figure 1:**  
The melt strength of Exceed XP permits converters to increase output of thick liners when compared to conventional monolayer under-slab construction class-A liners.

Notebook 26592

<sup>1</sup> Vapor retarders are produced to meet specifications such as ASTM E1745, standard specification for water vapor retarders used in contact with soil or granular fill under concrete slabs, or ASTM D4397, standard specification for polyethylene sheeting for construction, industrial, and agricultural applications. ASTM E1745 defines three classes of membranes with a single moisture vapor permeability rating and three levels of physical strength; class A has the most resistance to tearing and puncture.

### Extremely damage resistant liners

Exceed™ XP performance polymers enable converters to efficiently produce incredibly tough construction class-A liners with extreme tear, puncture and barrier performance.

These polymers with a 0.5 MI (melt index) at 0.916 and 0.918 density offer a new performance benchmark for construction liner applications, compared to existing linear polyethylene resins. In 10 mil/250 µm films made with Exceed XP 8656, the dart impact resistance exceeds the class-A standard specification of 2,200 grams.

The eXtreme Performance of the construction liners provides protection during installation.

Derived benefits include:

- Reduced water vapor penetration for potential energy efficiency and reduced risk of mold formation
- Stronger, more puncture resistant film provides a potential reduction in exposure to make structures safer

### Innovation opportunities

Converters and producers are able to create new-to-the-world construction liner solutions or they can improve existing liner solutions.

Options include:

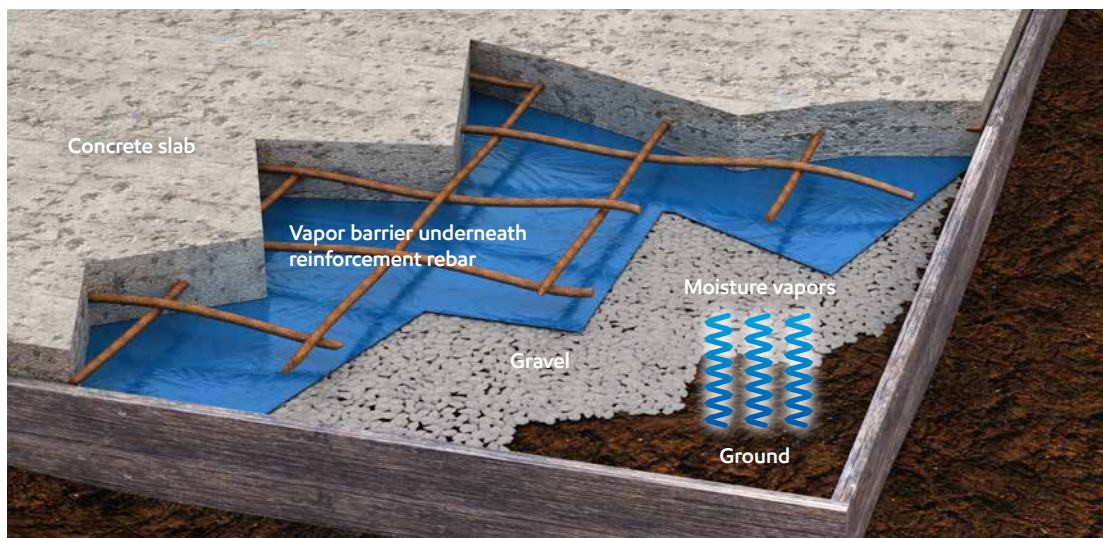
- Tailored liner formulations with higher density linear PE for balanced toughness/barrier performance
- Thicker liners are possible by leveraging the high melt strength and toughness of Exceed XP (versus the addition of LDPE)

### Cost optimization

The extreme toughness and bubble stability of Exceed XP allows converters to optimize film formulations with linear blends. These polymers also offer converters opportunities to increase output and improve film consistency even with large bubble sizes. This increases machine utilization and reduces waste from reprocessing.

Grades	Melt index (g/10 min)	Density (g/cm <sup>3</sup> )	Melt flow ratio (I <sub>21</sub> /I <sub>2</sub> )	Distinguishing features for eXtreme Performance
Exceed XP 8656	0.5	0.916	28-30	<ul style="list-style-type: none"><li>• Extreme dart impact resistance</li><li>• Exceptional bubble stability</li><li>• Enhanced flexibility</li></ul>
Exceed XP 8358	0.5	0.918	28-30	<ul style="list-style-type: none"><li>• Exceptional dart resistance</li><li>• Exceptional bubble stability</li><li>• Enhanced barrier</li></ul>

Test methods based on: Melt index and Melt flow ratio - ASTM D1238; Density - ExxonMobil method



### Exceed™ XP performance polymers — when eXtreme Performance matters.

©2016 ExxonMobil. ExxonMobil, the ExxonMobil logo, the interlocking "X" device and other product or service names used herein are trademarks of ExxonMobil, unless indicated otherwise. This document may not be distributed, displayed, copied or altered without ExxonMobil's prior written authorization. To the extent ExxonMobil authorizes distributing, displaying and/or copying of this document, the user may do so only if the document is unaltered and complete, including all of its headers, footers, disclaimers and other information. You may not copy this document to or reproduce it in whole or in part on a website. ExxonMobil does not guarantee the typical (or other) values. Any data included herein is based upon analysis of representative samples and not the actual product shipped. The information in this document relates only to the named product or materials when not in combination with any other product or materials. We based the information on data believed to be reliable on the date compiled, but we do not represent, warrant, or otherwise guarantee, expressly or impliedly, the merchantability, fitness for a particular purpose, freedom from patent infringement, suitability, accuracy, reliability, or completeness of this information or the products, materials or processes described. The user is solely responsible for all determinations regarding any use of material or product and any process in its territories of interest. We expressly disclaim liability for any loss, damage or injury directly or indirectly suffered or incurred as a result of or related to anyone using or relying on any of the information in this document. This document is not an endorsement of any non-ExxonMobil product or process, and we expressly disclaim any contrary implication. The terms "we," "our," "ExxonMobil Chemical" and "ExxonMobil" are each used for convenience, and may include any one or more of ExxonMobil Chemical Company, Exxon Mobil Corporation, or any affiliate either directly or indirectly stewarded.

Contact us for more information:  
[exxonmobilchemical.com/exceedxp](http://exxonmobilchemical.com/exceedxp)

E0116-003E49

**ExxonMobil**  
Energy lives here™