



Rotomolded products with improved toughness using ExxonMobil's Exceed™ performance polyethylene

The rotomolding plastic process allows for the fabrication of large hollow parts or components in almost all shapes and sizes. It is especially suitable for a wide range of applications, including storage tanks, consumer sporting equipment, playground equipment, industrial parts and more.

Rotomolded products need to be strong enough to endure harsh weather conditions and long-term use. High-quality rotomolded products with improved toughness and durability are now possible using our Exceed™ performance polyethylene (PE).



Excellent
impact
resistance



Good
durability



Outstanding
visual
appeal



Potential
energy
savings

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.

Exceed™ 4536 performance PE is great for rotomolding applications and can upgrade linear low-density polyethylene (LLDPE) grade solutions

Exceed 4536 PE resins offer manufacturers the opportunity to produce high-performance products with exceptional impact resistance with balanced stiffness, surpassing that of commonly available LLDPE. This enables rotomolders to scope potential thickness reduction in their molded products.

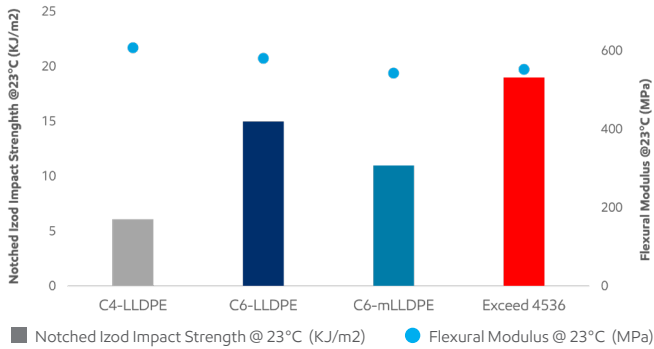
Moreover, Exceed 4536 resins deliver significant environment stress cracking resistance (ESCR), ensuring that tanks and other products can withstand exposure to chemicals and other environmental factors, while maintaining their strength and durability over time.

Additionally, Exceed 4536 provides a fine surface finish of rotomolding applications and allows for the incorporation of increased recycled content without compromising the quality of the finished products. Notably, some customers also reported lower production costs and reduced operation cycle times when rotomolding their products using Exceed 4536 performance PE resins because of the low zero shear viscosity.



Picture courtesy of Greenage Industries

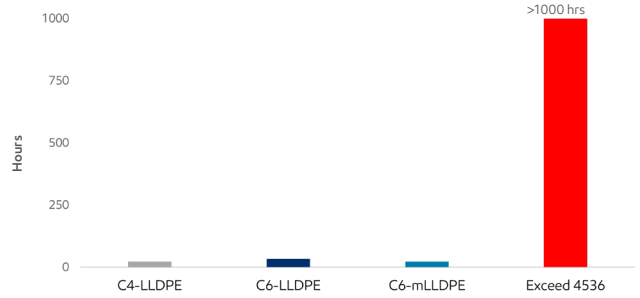
Notched Izod Impact vs Flexural Modulus



Testing performed on compression molded specimens as per ExxonMobil test method. Data from tests performed by or on behalf of ExxonMobil.

ESCR F50 (Hours)

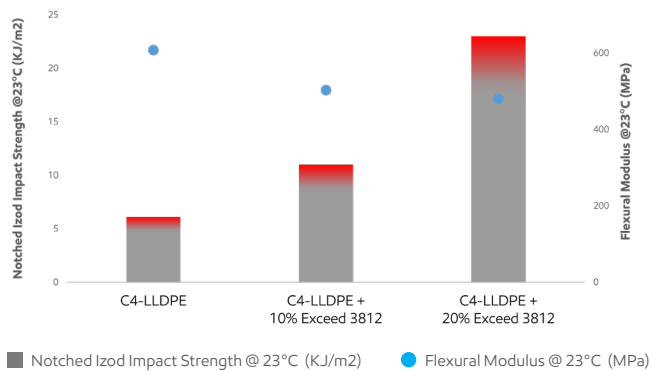
Condition B* (*10% Igepal, Bath temperature: 50°C)



Testing performed on compression molded specimens as per ExxonMobil test method. Data from tests performed by or on behalf of ExxonMobil.

Exceed™ 3812 performance PE, as a lean blend partner, can enhance your rotomolding solutions with an excellent improvement in impact strength and a significant boost in ESCR performance.

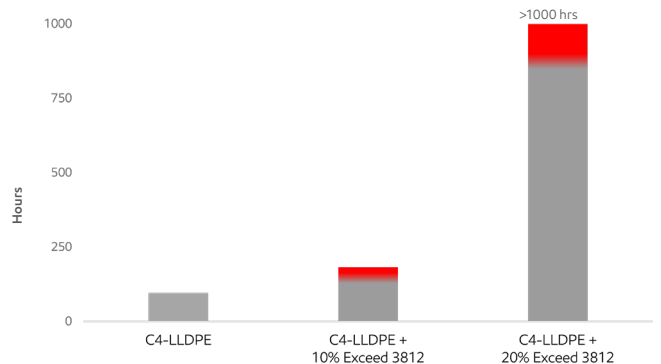
Notched Izod Impact vs Flexural Modulus



Testing performed on compression molded specimens as per ExxonMobil test method. Data from tests performed by or on behalf of ExxonMobil.

ESCR F50 (Hours)

Condition B* (*100% Igepal, Bath temperature: 50°C)



Testing performed on compression molded specimens as per ExxonMobil test method. Data from tests performed by or on behalf of ExxonMobil.

Exceed performance polymer grade name	2.16 kg MI (g/10min)	5 kg MFR (g/10min)	21.6 kg MFR (g/10min)	Density (g/cm³)	Hardness (Shore D)	Vicat (°C)
Exceed 4536PA	4.5	11	79	0.936	58	118
Exceed 3812PA	3.8	9.8	67	0.912	48	93

Test item	Test method	Test item	Test method
MI (2.16 kg, 190 °C)	ExxonMobil method	Shore hardness	ExxonMobil method
MFR (5 kg, 190 °C)	ExxonMobil method	Vicat point	ExxonMobil method
MFR (21.6 kg, 190 °C)	ExxonMobil method	Notched Izod Impact	ExxonMobil method based on ISO 180/A
Density	ExxonMobil method	Flexural modulus	ExxonMobil method based on ISO 178
ESCR (Condition-B; 10% Igepal, Bath Temperature: 50°C) F50	ExxonMobil Method based on ASTM D1693		

Why ExxonMobil PE? Why today?

tomorrow's performance today

What some might view as solutions that will only happen in the future, ExxonMobil PE is making possible today – through our innovative and reliable products, collaborative approach, technology leadership and support, and our unmatched global supply and resources. Why wait for tomorrow to advance your business today? Contact your ExxonMobil PE representative and begin experiencing tomorrow's performance today.

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