



Technical Data Sheet

LL40 – 40 Mil Smooth LLDPE Geomembrane

Resin Properties	Test Method	Frequency ⁽²⁾	Resin LL
Resin density	ASTM D1505	Once per Batch	< 0.926 g / cm ³
Melt Index <i>(max.)</i>	ASTM D1238	Once per Batch	1.0 g / 10 minutes
Oxidative Induction Time <i>(standard avg.)</i>	ASTM D3895	Once per Batch	100 minutes

Sheet Properties	Test Method	Frequency ⁽²⁾	LL40	
			Metric Units	English Units
Thickness <i>(min. avg.)</i> <i>(min.)</i>	ASTM D5199	Every Roll	1.00 mm 0.90 mm	40 mil 36 mil
Standard Roll Dimensions <i>(Roll dimensions may vary ± 1%)</i>	-	-	6.8 m x 237.7 m	22.3 ft x 780.0 ft
Sheet Density	ASTM D1505	Every Second Roll	≤ 0.939 g / cm ³	≤ 0.939 g / cm ³
Carbon Black Content	ASTM D4218	Every Second Roll	2.0 to 3.0 %	2.0 to 3.0 %
Carbon Black Dispersion	ASTM D5596	Every Sixth Roll	Category 1 & 2	Category 1 & 2
Tensile properties <i>(min. avg.)</i> ⁽¹⁾ - Break strength - Break Elongation (2 in. gage length)	ASTM D6693	Every Second Roll	28 kN / m 800 %	160 lbs / in 800 %
Tear Resistance <i>(min. avg.)</i>	ASTM D1004	Every Sixth Roll	100 N	22 lbf
Puncture Resistance <i>(min. avg.)</i>	ASTM D4833	Every Sixth Roll	276 N	62 lbf
2 % Modulus <i>(max.)</i>	ASTM D5323	Per Formulation	420 kN / m	2400 lbs / in
Multi-Axial Tensile <i>(min.)</i>	ASTM D5617	Per Formulation	30 %	30 %
Oven Aging - % retained after 90 days High pressure OIT <i>(min. avg.)</i>	ASTM D5721 ASTM D5885	Per Formulation	60 %	60 %
UV Resistance - % Retained after 1600hrs High pressure OIT <i>(min. avg.)</i>	GR-GM-11 ASTM D5885	Per Formulation	35 %	35 %

1 - Machine direction (MD) and Cross machine Direction (XMD) average values should be on the basis of 5 test specimens each direction.

2 - Testing frequency based on standard roll dimensions and one resin batch is approximately 180,000 lbs (or one railcar)