

GEOMEMBRANE LINER
ENGINEERING SPECIFICATION GUIDE



RLLDPE

Reinforcing polyester scrim between LLDPE barrier layers

Physical Property	Test Method	Property of Unaged Sheet	
		Min. Average Roll Value	Typical Average Roll Value
Thickness, in (mm)			
24 mil	ASTM D 5199	0.021 (0.53)	0.023 (0.58)
30 mil		0.028 (0.71)	0.029 (0.73)
36 mil		0.035 (0.89)	0.036 (0.91)
Mass per unit area, lb/ft ² (g/ft ²) (kg/m ²)			
24 mil	ASTM D 5261	0.10 (48) (0.52)	0.11 (51) (0.55)
30 mil		0.13 (60) (0.65)	0.13 (60) (0.65)
36 mil		0.16 (78) (0.84)	0.17 (79) (0.85)
Breaking strength, lbf (kN) (grab tensile at strain rate of 12 in./min.)			
24 mil	ASTM D 751 Grab Method A	214 (0.93)	258 (1.1)
30 mil		270 (1.2)	308 (1.4)
36 mil		321 (1.4)	337 (1.5)
Elongation at break of fabric, %			
24 mil	ASTM D 751	28.0	29.9
30 mil		34.0	36.9
36 mil		29.1	30.9
Tearing strength, lbf (N) (2 in/min strain rate)			
24 mil	ASTM D 5884 (large scale "tongue tear")	109 (483)	130 (577)
30 mil		118 (525)	129 (574)
36 mil		134 (596)	151 (673)
Low temperature flexibility, °F (°C)	ASTM D2136 1/8 in mandrel 4 hour @ Temp.)	-40 (-40)	-40 (-40)
Linear Dimensional Change (shrinkage), %	ASTM D 1204 (100°C for 1 hr)	± 1.0 max.	-0.33
Hydrostatic resistance, lbf/in ² or psi (MPa) (Mullen burst)			
24 mil	ASTM D 751 Procedure A	180 (1.2)	392 (2.7)
30 mil		314 (2.2)	322 (2.2)
36 mil		405 (2.8)	414 (2.8)
Field seam strength, lb/in (kN/m) seam tested in peel after weld	ASTM D 4437 1 in. wide	40 (7.1)	40 (7.1)
Water vapor permeance, Perms			
24 mil	ASTM E 96 Proc. BW	0.051	0.054
30 mil		*	*
36 mil		0.237	0.340
Puncture resistance, lbs (N)			
24 mil	ASTM D 4833	68 (303)	76 (339)
30 mil		72 (320)	81 (362)
36 mil		95 (421)	107 (475)
Resistance to UVA weathering 1600 hrs UVA 0.72 W/m ² /nm @ 340nm Cycle 20 hrs light at 75°C, 4 hrs dark at 60°C HPOIT before, after (percent retained)			
24 mil	GRI GM 11 GRI GM 13	1686, 1388 (82%)	1686, 1388 (82%)
30 mil		1513, 1465 (97%)	1513, 1465 (97%)
36 mil		1589, 1347 (85%)	1589, 1347 (85%)

* not available

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PO Box 16465 Denver, CO 80216 303-289-1818 FAX 303-287-3136