

# Linear Low Density Polyethylene MicroSpike® Liner



## Product Data

Property	Test Method	Values			
Thickness, nominal, (mm)		40 (1.0)	60 (1.5)	80 (2.0)	100 (2.5)
Thickness (min. ave.), mil (mm)	ASTM D5994*	38 (.95)	57 (1.43)	76 (1.90)	95 (2.38)
Thickness (lowest indiv. for 8 of 10 spec.), mil (mm)	ASTM D5994*	36 (.90)	54 (1.35)	72 (1.80)	90 (2.25)
Thickness (lowest indiv. for 1 of 10 spec.), mil (mm)	ASTM D5994*	34 (.85)	51 (1.28)	68 (1.70)	85 (2.13)
*The thickness values may be changed due to project specifications (i.e., absolute minimum thickness)					
Asperity Height (min. ave.), mil (mm)	ASTM D7466	16 (.41)	16 (.41)	16 (.41)	16 (.41)
Density, g/cc, maximum	ASTM D792, Method B	0.939	0.939	0.939	0.939
Tensile Properties (ave. both directions)	ASTM D6693, Type IV				
Strength @ Break (min. ave.), lb/in width (N/mm)	2 in/minute	112 (19.6)	168 (29.4)	224 (39.2)	280 (49.0)
Elongation @ Break (min. ave.), % (GL=2.0in)	5 specimens in each direction	400	400	400	400
Tear Resistance (min. ave.), lbs. (N)	ASTM D1004	25 (111)	36 (160)	50 (222)	60 (267)
Puncture Resistance (min. ave.), lbs. (N)	ASTM D4833	50 (222)	70 (310)	90 (400)	115 (512)
Carbon Black Content (range in %)	ASTM D4218	2 - 3	2 - 3	2 - 3	2 - 3
Carbon Black Dispersion (Category)	ASTM D5596	Only near spherical agglomerates for 10 views: 9 views in Cat. 1 or 2, and 1 view in Cat. 3			
Oxidative Induction Time, minutes	ASTM D3895, 200°C, 1 atm O <sub>2</sub>	≥140	≥140	≥140	≥140
Melt Flow Index, g/10 minutes	ASTM D1238, 190°C, 2.16kg	≤1.0	≤1.0	≤1.0	≤1.0
Oven Aging	ASTM D5721	60	60	60	60
with HP OIT, (% retained after 90 days)	ASTM D5885, 150°C, 500psi O <sub>2</sub>				
UV Resistance	ASTM D7238	20hr. Cycle @ 75°C/4 hr. dark condensation @ 60°C			
with HP OIT, (% retained after 1600 hours)	ASTM D5885, 150°C, 500psi O <sub>2</sub>	35	35	35	35
2% Secant Modulus (max.), lb/in. (N/mm)	ASTM D5323	2400 (420)	3600 (630)	4800 (840)	6000 (1050)
Axi-Symmetric Break Resistance Strain, % (min.)	ASTM D5617	30	30	30	30

Agru America's geomembranes are certified to pass Low Temp. Brittleness via ASTM D746 (-80°C), and Dimensional Stability via ASTM D1204 (±2% @ 100°C).

These product specifications meet or exceed GRI's GM17

## Supply Information (Standard Roll Dimensions)

Thickness		Width		Length		Area (approx.)		Weight (average)*	
mil	mm	ft	m	ft	m	ft <sup>2</sup>	m <sup>2</sup>	lbs	kg
40	1.0	23	7	710	283.47	16,330	1,514.87	3,900	1,770
60	1.5	23	7	505	216.41	11,615	1,078	3,900	1,770
80	2.0	23	7	385	117.35	8,855	821	3,900	1,770
100	2.5	23	7	310	94.49	7,130	661	3,900	1,770

### Notes:

All rolls are supplied with two slings. All rolls are wound on a 6 inch core. Special lengths are available on request. All roll lengths and widths have a tolerance of ±1%  
\*The weight values may change due to project specifications (i.e. absolute minimum thickness or special roll lengths) or shipping requirements (i.e. international containerized shipments).

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