

# Black/White MicroSpike®

## HIGH DENSITY POLYETHYLENE

AGRU America's textured geomembranes are manufactured on state-of-the-art manufacturing equipment using the flat die calender manufacturing process, a method that produces a more consistent core thickness than other processes, such as the blown film extrusion process. AGRU uses only the highest-grade HDPE and LLDPE resins manufactured in North America.

AGRU America's geomembranes are certified to pass Low Temp. Brittleness via ASTM D746 (-80°C), Dimensional Stability via ASTM D1204 (±2% @ 100°C). Oven Aging and UV Resistance are tested per GRI GM 13. These product specifications meet or exceed GRI's GM13.

### PRODUCT DATA

Property	Test Method	Frequency	Minimum Average Values									
Thickness (nominal), mil (mm)	ASTM D5994	Per Roll	30 (0.75)	40 (1.0)	60 (1.5)	80 (2.0)	100 (2.5)					
Thickness (minimum avg), mil (mm)			29 (0.71)	38 (0.95)	57 (1.43)	76 (1.9)	95 (2.38)					
Thickness (min 8 of 10), mil (mm)			27 (0.68)	36 (0.90)	54 (1.35)	72 (1.8)	90 (2.25)					
Thickness (lowest individual), mil (mm)			26 (0.64)	34 (0.85)	51 (1.28)	68 (1.7)	85 (2.13)					
Asperity Height mils, (mm)	ASTM D7466	2nd Roll	20 (0.51)	20 (0.51)	20 (0.51)	18 (0.46)	18 (0.46)					
Density, g/cc, minimum	ASTM D792, Method B	200,000 lb	0.94	0.94	0.94	0.94	0.94					
Tensile Properties (both directions)	ASTM D6693, Type IV	20,000 lb	2 in/minute	66 (11.6)	88 (15.4)	132 (23.1)	176 (30.8)	220 (38.5)				
Strength @ Yield, lb/in width (N/mm)	13								13	13	13	13
Elongation @ Yield, % (GL=1.3in)	66 (11.6)								88 (15.4)	132 (23.1)	176 (30.8)	220 (38.5)
Strength @ Break, lb/in width (N/mm)	350								350	350	350	350
Elongation @ Break, % (GL=2.0in)												
Tear Resistance, lbs (N)	ASTM D1004	45,000 lb	23 (102)	30 (133)	45 (200)	60 (267)	72 (320)					
Puncture Resistance, lbs (N)	ASTM D4833	45,000 lb	60 (267)	90 (400)	120 (534)	150 (667)	180 (801)					
Carbon Black Content, % (range) <sup>1</sup>	ASTM D4218	20,000 lb	2 - 3	2 - 3	2 - 3	2 - 3	2 - 3					
Carbon Black Dispersion (Category)	ASTM D5596	45,000 lb	Only near spherical agglomerates: 10 views in Cat. 1 or 2									
Stress Crack Resistance (SP-NCTL), hrs.	ASTM D5397 Appendix	200,000 lb	500	500	500	500	500					
Oxidative Induction Time, minutes	ASTM D3895, 200°C, 1 atm O <sub>2</sub>	200,000 lb	≥140	≥140	≥140	≥140	≥140					

<sup>1</sup>Ash content may be ≥3 due to white layer

### SUPPLY INFORMATION (STANDARD ROLL DIMENSIONS)

THICKNESS		WIDTH			LENGTH		AREA (APPROX.)	
mil	mm	ft	m		ft	m	ft <sup>2</sup>	m <sup>2</sup>
30	0.75	23	7	Double-Sided	980	299	22,540	2,094
				Single-Sided	1050	320	24,150	2,244
40	1.0	23	7	Double-Sided	750	229	17,250	1,603
				Single-Sided	800	244	18,400	1,709
60	1.5	23	7	Double-Sided	540	165	12,420	1,154
				Single-Sided	560	171	12,880	1,197
80	2.0	23	7	Double-Sided	410	125	9,430	876
				Single-Sided	425	130	9,775	908
100	2.5	23	7	Double-Sided	335	102	7,705	716
				Single-Sided	340	104	7,820	726

Note:

Average roll weight is 3,900 lbs (1,770 kg). All rolls are supplied with two slings. Rolls are wound on a 6" core. Special length available upon request. Roll length and width have a tolerance of ±1%. The weight values may change due to project specifications (i.e. average or absolute minimum thickness) or shipping requirements (i.e. international containerized shipments).

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Revision Date: March 21, 2018 3:26 PM

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