

AquaBlock HM Smooth Geomembrane

AquaBlock HM Smooth Geomembrane is a black, high quality, high density polyethylene (HDPE) geomembrane produced from specially formulated polyethylene resin. The polyethylene resin is designed specifically for flexible and durable geomembrane applications. Aquablock HM Smooth Geomembrane contains approximately 97.5% polyethylene, 2.5% carbon black and trace amounts of antioxidants and heat stabilisers. Aquablock HM Smooth Geomembrane has outstanding chemical resistance, mechanical properties, environmental stress crack resistance, dimensional stability and thermal aging characteristics. Aquablock HM Smooth Geomembrane has excellent resistance to UV radiation and is suitable for exposed applications. These product specifications met or exceed GRI-GM 13.

Tested Property	Unit	Test Method	Values (*)				
Thickness ^(a)	mm	ASTM D 5199	0.75	1.0	1.5	2.0	2.5
Density	g/cm ³	ASTM D 792	≥ 0.94	≥ 0.94	≥ 0.94	≥ 0.94	≤ 0.94
Tensile Properties (each Direction)		ASTM D 638 / D 6693; type IV					
Strength at Yield	N/mm	50 mm/min	13 (11)	16 (15)	24 (22)	32 (30)	40 (37)
Elongation at Yield	%	lo = 33 mm	14 (12)	16 (13)	16 (13)	16 (13)	16 (13)
Strength at Break	N/mm	200 mm/min	26 (20)	33 (27)	49 (40)	66 (53)	83 (67)
Elongation at Break	%	lo = 50 mm	800 (700)	800 (700)	800 (700)	800 (700)	800 (700)
Tear Resistance	N	ASTM D 1004	100 (95)	140 (130)	205 (190)	275 (250)	350 (315)
Puncture Resistance	N	ASTM D 4833	340 (240)	420 (320)	560 (480)	690 (640)	830 (800)
Carbon Black Content	%	ASTM D 1603	2.0 - 3.0	2.0 - 3.0	2.0 - 3.0	2.0 - 3.0	2.0 - 3.0
Carbon Black Dispersion	Category	ASTM D 5596	1 / 2 ^(b)	1 / 2 ^(b)	1 / 2 ^(b)	1 / 2 ^(b)	1 / 2 ^(b)
Dimensional Stability (each Direction)	%	ASTM D 1204 (120 °C/1h)	± 2	± 2	± 2	± 2	± 2
Melt Flow Index ^(c)	g/10 min	ASTM D 1238 (190 °C / 5.0 kg) (190 °C / 2.16 kg)	≤ 3.0 ≤ 1.0	≤ 3.0 ≤ 1.0	≤ 3.0 ≤ 1.0	≤ 3.0 ≤ 1.0	≤ 3.0 ≤ 1.0
Stress Crack Resistance (NCTL)	h	ASTM D 5397; Appendix	≥ 336	≥ 336	≥ 336	≥ 336	≥ 336
Oxidative Induction Time (OIT)	min	ASTM D 3895 (200°C; Pure O ₂ ; 1 atm)	≥ 100	≥ 100	≥ 100	≥ 100	≥ 100
Reference Property	Unit	Test Method	Values				
Low Temperature Brittleness	°C	ASTM D 746	- 77	- 77	- 77	- 77	- 77
UV Resistance ^(e) HP-OIT retained after 1,600 hrs ^(f)	%	GRI-GM 11 ASTM D 5885	≥ 50	≥ 50	≥ 50	≥ 50	≥ 50
Surface	---	---	double-sided smooth				

(*): All values - unless otherwise noted - are nominal values. Values in brackets are minimum values within the 95% confidence interval

(a): Tolerance ± 10% - Special thickness available upon request.

(b): Dispersion only applies to near spherical agglomerates. 9 of 10 views shall be category 1 or 2. No more than 1 view from category 3.

(c): Standard test conditions: 190°C/5.0kg.

(d) Test-Conditions: 20 hours UV cycle at 75°C followed by 4 hours condensation at 60°C; total: 1,600 hours.

(e) UV resistance is based on percent retained value regardless of the original High Pressure - OIT value.

(f) Roll widths and lengths have a tolerance of ± 1%



Geosynthetics