ATARFIL HD EVO

Pushing the boundaries of science and technology Atarfil R&D has specially designed an evolution range of geomembrane **ATARFIL EVOLUTION** that exceed more demanding best-practice environmental management measures with unequaled endurance properties such a stress crack resistance, standard and high-pressure oxidative induction time, oven aging and UV resistance properties.

ATARFIL HD EVO geomembranes are manufactured from maximum quality High Density Polyethylene (HDPE) resins by the most advanced in-house flat-die technology that comply with the most rigorous requirements established for their use, containing 97.5% of pure polymer, and approximately 2.5% of carbon black, antioxidants and thermal stabilizers.

ATARFIL HD EVO scores the highest industry value in STRESS CRACK RESISTANCE exceeding the most demanding standards worldwide. Along with its extreme chemical resistance and long projected lifetime, makes it the most suitable option for critical applications.

PHYSICAL PROPERTIES

Property	Test Method	Unit	Value	Frequency[1]
Density of Raw Material	ASTM D 792	g/cc	≥ 0.932	-
Melt Flow Index	ASTM D 1238 (190°C/2.16 Kg)	g/10 min	≤ 0.40	1 per batch
Density of Geomembrane	ASTM D 792	g/cc	0.946 ± 0.004	90,000 kg
Carbon Black Content	ASTM D 4218	%	2.0 – 2.5	Per roll
Carbon Black Dispersion	ASTM D 5596	Category	Note 3	20,000 kg
Dimensional Stability	ASTM D 1204 (100°C/1h)	%	± 1.5	Per day
Low Temperature Brittleness (t° -70°C)	ASTM D 746	-	No cracks	Per formulation

ENDURANCE PROPERTIES

Property	Test Method	Unit	Value	Frequency[1]
Stress Crack Resistance	ASTM D 5397/ ISO18488[4]	h	≥ 3,000	90,000 kg
Oxidative Induction Time (OIT) Std OIT HP OIT	 ASTM D 3895 ASTM D 5885	min	 ≥ 120 ≥ 500	90,000 kg
Oven Aging at 85°C. % retained aft 90days: Std OIT HP OIT	ASTM D 5721 ASTM D 3895 ASTM D 5885	%	 ≥ 55 ≥ 80	Per formulation
UV Resistance HP OIT % retained after 1600h	ASTM D 7238 ASTM D 5885	%	≥ 75	Per formulation
Oxidation	EN 14575	%	≤ 15	Per formulation

MANUFACTURING PROPERTIES

Property	Test Method	Unit	Value						Frequency[1]
Thickness (Nominal)	ASTM D 5199	mm	0.75	1.00	1.50	2.00	2.50	3.00	Per roll
Thickness (Minimum Average)		mm	0.75	1.00	1.50	2.00	2.50	3.00	
Thickness (Minimum Individual Value)		%	- 10						
Mechanical Properties[2]									
Tensile Strength at Yield	ASTM D 6693 Type IV	N/mm	13 (12)	18 (16)	26 (24)	35 (32)	44 (40)	53 (48)	9,000 kg
Elongation at Yield		%	≥ 13						
Tensile Strength at Break		N/mm	24 (20)	32 (27)	48 (40)	64 (53)	80 (67)	96 (80)	
Elongation at Break		%	800 (700)						
Tear Resistance	ASTM D 1004	N	≥ 95	≥ 135	≥ 202	≥ 270	≥ 337	≥ 405	20,000 kg
Puncture Resistance	ASTM D 4833	N	≥ 270	≥ 350	≥ 490	≥ 640	≥ 810	≥ 980	20,000 kg

STANDARD SIZES

Thickness (mm)	0.75	1.00	1.50	2.00	2.50	3.00
Roll Width (m)	Roll Length (m)					
6 / 6.30 / 7.50	280	210	140	105	84	70

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(1) Indicated frequency is minimum.
(2) Indicated values are average. In brackets minimum values with 95% confidence level.
(3) Carbon black dispersion (only near spherical agglomerates) for 10 different views: in Categories 1 or 2 only.
(4) Additional information regarding correlation between Test Methods ISO 18488 and ASTM D 5397 available upon request.

This product specifications meet or exceed GRI GM13.
This Geomembrane meet or exceed EPA Victoria's Best Practice Environmental Management Publication Siting, design, operation and rehabilitation of landfills (Landfill BPEM)
This information is provided for reference purposes. ATARFIL assumes no liability in connection with the use of this information or the final use of the product. It may be revised at any time, so it is subject to change permanently.
ATARFIL HD M EVO GRI, ASTM ENG MM Rev 0

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ATARFIL MIDDLE EAST
ATARFIL AMERICA
Spain, UAE, USA, Mexico, Turkey, India, South Africa and Australia.

SAFE CONTAINMENT
WASTE, WATER & MINING