

ATARFIL HD TM-TMT is a structured textured geomembrane manufactured from best in class Polyethylene (HDPE) resins coupled with specific antioxidant package by the most advanced in-house flat-die technology. This result in a quality and consistency product with maximum durability and long term performance. The structured texturing process ensure that excellent mechanical properties and Elongation at Break values are maintained, and the consistency of asperity height and spike density result in higher interface friction values than traditional techniques. It also includes non-textured smooth edges for ease of QC testing.



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 (at -70°C)	ASTM D 746	-	No cracks	Per formulation

ENDURANCE PROPERTIES				
Property	Test Method	Unit	Value	Frequency ¹
Stress Crack Resistance ⁽⁵⁾	ASTM D 5397/ ISO18488 ⁽⁴⁾	h	≥ 3,000	90,000 kg
Oxidative Induction Time (OIT) Std OIT HP OIT	ASTM D 8117 ASTM D 5885	min	≥ 120 ≥ 500	90,000 kg
Oven Aging at 85°C, HP OIT % retained after 90 days	ASTM D 5721 ASTM D 5885	%	≥ 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

ROUGHNESS				
Property	Test Method	Unit	Value	Frequency ¹
Asperity Height ⁽²⁾	ASTM D 7466	mm	0.60 (0.45)	Every 2 nd roll
Friction Angle ⁽⁶⁾	ISO 12957-1	°	≥ 29	-
Spikes Density	-	Spikes/m ²	83700	-

MANUFACTURING PROPERTIES								
Property	Test Method	Unit	Value					Frequency ¹
Thickness (Nominal)	ASTM 5994	mm	1.00	1.50	2.00	2.50	3.00	Per roll
Thickness (Minimum Average)		%	5					
Thickness (Minimum Individual Value)		%	10					
Mechanical Properties ²								
Tensile Strength at Yield	ASTM D 6693 (Type IV)	N/mm	18 (16)	26 (24)	35 (32)	44 (40)	53 (48)	9,000 kg
Elongation at Yield		%	≥ 13					
Tensile Strength at Break		N/mm	18 (15)	27 (22)	36 (30)	45 (37)	54 (47)	
Elongation at Break		%	500 (400)					
Tear Resistance	ASTM D 1004	N	≥ 135	≥ 202	≥ 270	≥ 337	≥ 405	20,000 kg
Puncture Resistance	ASTM 4833	N	≥ 320	≥ 450	≥ 570	≥ 690	≥ 820	20,000 kg

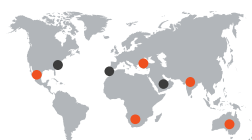
STANDARD SIZES										
Roll Width (m)	1.00		1.50		2.00		2.50		3.00	
	Roll Length (m)		Roll Length (m)		Roll Length (m)		Roll Length (m)		Roll Length (m)	
	TM	TMT	TM-TMT	TM	TMT	TM-TMT	TM	TMT	TM-TMT	TM-TMT
6	220	210	155	120	115	95	80			
7.5	130		100	80		65		60		

(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.
(5) Test conducted on representative smooth membrane samples.
(6) Using a polypropylene geotextile of 1000gr/m².

This product specifications meet or exceed GRI GM13.
The information contained in this document is provided for informational purposes only. Atarfil reserves the right to change this information without prior notice.

ATARFIL HD TM-TMT E GRI, ASTM ENG MM Rev 3

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Manufacturing plants: Atarfil | Europe | Middle East | America

Sales offices: Spain, UAE, USA, Mexico, Turkey, India, South Africa and Australia.

Safe Containment
Waste Water Mining