

## Raw Material

## Polypropylene

ATARPOL TM / TMT is a geomembrane manufactured from maximum quality Polypropylene PP resins, duly contrasted, that comply with the most rigorous requirements established for their use.

ATARPOL TM / TMT contains 97,5% of pure polymer, and approximately 2,5% of Carbon Black, antioxidants and thermal stabilizers. The product does not contain plasticizers or fillers that can migrate over time.

The geomembrane ATARPOL TM / TMT is manufactured under permanent quality controls.

<b>Surface</b>	<b>TM</b> Structured 1 side	<b>Colour</b>	<b>Black</b>
	<b>TMT</b> Structured 2 sides		<b>RAL Code</b>

	Tested Property	Unit	Test Method	Value
<b>Raw Material Identification</b>	Density of Raw Material	g/cm <sup>3</sup>	UNE EN ISO 1183-1	0.87 - 0.91
	Density of Geomembrane	g/cm <sup>3</sup>	UNE EN ISO 1183-1	0.88 - 0.92
	Melt Flow Index	g/10min	UNE EN ISO 1133-1 (230°C/2.16 Kg)	2.00
			UNE-EN ISO 1133-1 (230°C/5 Kg)	4.00
Carbon Black content	%	ASTM D 4218	2.0 - 2.5	
<b>Durability</b>	Oxidative Induction Time (OIT)	min	UNE EN 728 (200°C)	> 100
	Stress Crack Resistance/NCTL	h	ASTM D 5397	> 300
	Oxidation	%	UNE EN 14575	15

	Tested Property	Unit	Test Method	Value
<b>Functional Properties</b>	Low Temperature Brittleness (t <sup>-</sup> : -40°C)	-	UNE EN 495-5	No cracks
	Water Permeability	m <sup>3</sup> /m <sup>2</sup> .day	UNE EN 14150	< 1.10 <sup>-6</sup>
	Coefficient of Linear Thermal Expansion	1/°C	ASTM D 696	1.15.10 <sup>-4</sup>
	Water Absorption	%	UNE EN ISO 62 (24h)	0.1
			UNE EN ISO 62 (6 days)	0.5
	Thickness of Coextruded Layer	%	UNE EN 1849-2	-
	Asperity Height	mm	ASTM D 7466	0.90

	Tested Property	Unit	Test Method	Value			
<b>Strength Characteristics Quality of Final Product</b>	Thickness	mm	UNE EN 1849-2	1.00	1.50	2.00	
	Confidence level 95%	%	-	Tolerance: ± 6			
	Confidence level 90%	%	-	Tolerance: ± 4			
	<b>Tensile Properties (*)</b>						
	Tensile Strength at Break	N/mm	UNE-EN ISO 527	15 (12)	23 (18)	30 (24)	
	Elongation at Break	%		800 (700)			
	Tear Resistance	N	ISO 34-1	60	90	120	
	Puncture Resistance	KN	UNE-EN ISO 12236	0.8	1.1	1.4	
	Exploding Resistance	%	pr EN 14151	> 15			
	Dimensional Stability	%	UNE EN ISO 14632 (100°C, 1h)	± 1,5			

211212	PRESENTATION (Standard Sizes)	Parameter	Units	1,00		1,50		2,00
				TM	TMT	TM	TMT	TM-TMT
				Roll width	m	6		6
Roll Length	m	200	150	150	125	110		
Surface	m <sup>2</sup>	1200	900	900	750	660		

(\*) Values indicated are medium and obtained from the smooth part of the geomembrane. In brackets values with 95% confidence level.

This information is provided for reference purposes and is not intended as guarantee. ATARFIL assumes no liability in connection with the use of this information or the final use of the product.