

**Raw Material**

**Linear Low Density Polyethylene**

**ATARFIL LLD** is a geomembrane manufactured from maximum quality linear low density polyethylene LLDPE resins, duly contrasted, that comply with the most rigorous requirements established for their use.

**ATARFIL LLD** 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 **ATARFIL LLD** is manufactured under permanent quality controls.

<b>Surface</b>	<b>Smooth</b>	<b>Colour</b>	<b>Black</b>
		<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	< 0,932
	Density of Geomembrane	g/cm <sup>3</sup>	UNE EN ISO 1183-1	≤ 0,940
	Melt Flow Index	g/10 min	UNE EN ISO 1133 D Condition (190°C/2,16 Kg)	≤ 1,2
			UNE EN ISO 1133 T Condition (190°C/5 Kg)	≤ 3,5
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/°K	ASTM D 696	1,93·10 <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 53213-2	-
Asperity Height	mm	GRI GM 12	-	

	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	2.50	3.00	
	Confidence level 95%	%	-	Tolerance: ± 6					
	Confidence level 90%	%	-	Tolerance: ± 4					
	<b>Tensile Properties (*)</b>								
	Tensile strength at Break	N/mm	UNE-EN ISO 527 (Type V)	31 (26)	46 (39)	62 (52)	77 (65)	93 (78)	
	Elongation at Break	%		800 (≥750)					
	Tear Resistance	N	ISO 34-1	≥ 100	≥ 150	≥ 200	≥ 250	≥ 300	
	Puncture Resistance	KN	UNE-EN ISO 12236	2.50	3.00	4.50	5.00	6.00	
	Exploding Resistance	%	pr EN 14151	< 15					
	Dimensional Stability	%	UNE EN ISO 14632 (100°C, 1h)	± 1,5					

	Parameter	Units	1,00	1,50	2,00	2,50	3,00
90708	<b>PRESENTATION (Standard Sizes)</b>						
	Roll width	m	6	6	6	6	6
	Roll Length	m	210	140	105	84	70
	Surface	m <sup>2</sup>	1260	840	630	504	420

(\*) Values indicated are medium. 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.