

Technical Data Sheet LLDPE Geomembrane

LLDPE is a linear low density polyethylene geomembrane manufactured with the highest quality resin specifically formulated for flexible geomembranes. This product is used in applications that require increased flexibility and elongation properties where differential or localised subgrade settlements may occur.

Smooth Geomembrane

Tested Properties	Unit	Test Method	Values (*)					
Thickness (a)	mm	ASTM D 5199	0.5	0.75	1.0	1.5	2.0	2.5
Density	g/cm ³	ASTM D 792	≤0.939	≤0.939	≤0.939	≤0.939	≤0.939	≤0.939
Tensile Properties (each direction) (minimum average)		ASTM D 638/6693 Type 5; 200 mm/min Lo=50 mm						
Strength at break	N/mm		16 (13)	24 (20)	33 (27)	50 (40)	66 (53)	82 (66)
Elongation at break	%		950 (800)	950 (800)	950 (800)	950 (800)	950 (800)	950 (800)
Tear Resistance (minimum average)	N	ASTM D 1004	55 (50)	80 (70)	110 (100)	165 (150)	220 (200)	275 (250)
Puncture Resistance (minimum average)	N	ASTM D 4833	160 (120)	240 (190)	320 (250)	430 (370)	550 (500)	660 (620)
Carbon Black Content	%	ASTM D 4218	2.0 – 3.0	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)	1/2(b)
Dimensional Stability (each direction)	%	ASTM D 1238	±2	±2	±2	±2	±2	±2
Melt Flow Index (c)	g/10 min	DIN EN ISO 1133 (190°C / 5.0KG) (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	≤3.0 ≤1.0
Oxidative Induction Time (OIT)	min	ASTM D 3895 (200°C; O ₂ ; 1atm)	≥100	≥100	≥100	≥100	≥100	≥100
Reference Property								
Multiaxial Elongation at Break	%	Similar to ASTM D 5167; Ø = 500mm	≥30	≥30	≥30	≥30	≥30	≥30
Low Temperature Brittleness	°C	ASTM D 746	-77	-77	-77	-77	-77	-77
UV Resistance (d) HP-OIT retained after 1,600 hours (e)	%	ASTM D 7238 ASTM D 5885	≥35	≥35	≥35	≥35	≥35	≥35
Roll Width (approx.) (f)	m	-	7.0	6.95/7.5				7.5
Surface	-	-	double-sided smooth					

- Notes:
- (*): All values – unless otherwise noted – are nominal values. Values in brackets are minimum values with the 95% confidence interval.
 - (a): Tolerance ± 10% for the lowest individual reading. – 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.
 - (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%

WLS reserves the right, as technology and know-how progress, to modify without warning the composition and conditions of use of its materials, and subsequently their price. As a result, orders shall only be accepted on the basis of the terms and technical specifications applicable at the time of receipt.