



HDPE

Impermeable Geomembrane

HDPE geomembranes are the most commonly specified liners in the construction industry. Tried and tested, HDPE membranes are resistant to most chemicals, are extremely robust and have a high stress fracture resistance. HDPE liners are available in 1mm, 1.5mm, 2mm, 2.5mm and 3mm sheet thickness. HDPE liners are suitable for anaerobic digestion applications, barriers against Hydrocarbons and protecting against the ingress of harmful soil based gases such as methane, carbon dioxide and radon.

APPLICATION AREAS

- ▶ Ponds
- ▶ Lagoons
- ▶ Anaerobic digestion ponds
- ▶ Gas barrier
- ▶ Hydrocarbon barrier
- ▶ Swales
- ▶ Attenuation tanks

FUNCTIONS

- ▶ Protection
- ▶ Reinforcement
- ▶ Drainage

EN 13361, EN 13362, EN 13492, EN 13493, EN 15382

CHARACTERISTIC	TEST METHOD	UNIT	1.0	1.5	2.0	2.5	3.0
Material	DSC analysis		PE-HD				
Surface			G/G (smooth / smooth); G/SA (smooth / textured); SA/SA (textured / textured)				G/G G/SA
Width ¹	EN 1848-2	m	5.1 or 8.0				

PHYSICAL PROPERTIES

Thickness (nom.) - min average - lowest individual	EN 1849-2	mm	1.0 ≥ 0.90 ≥ 0.90	1.5 ≥ 1.35 ≥ 1.35	2.0 ≥ 1.80 ≥ 1.80	2.5 ≥ 2.25 ≥ 2.25	3.0 ≥ 2.70 ≥ 2.70
Density	EN ISO 1183	g/cm ³	≥ 0.0942				
Dimensional stability	EN 1107-2	%	+/- 2				

EN 13361, EN 13362, EN 13492, EN 13493, EN 15382

CHARACTERISTIC	TEST METHOD	UNIT	1.0	1.5	2.0	2.5	3.0
HYDRAULIC PROPERTIES							
Permeability to liquids	EN 14150	m ³ /(m ² .d)	< 1.0 E-06				
Gas permeability	ASTM D 1434	m ³ /(m ² .d) mol/(m ² .d)	0.135 E-03 6.03 E-03	0.040 E-03 1.785 E-03			
MECHANICAL PROPERTIES							
Tensile strength MD / CMD	EN ISO 527-1.3 Specimen type 5 Velocity 100mm/min	N/mm ²	32 / 32 (28 / 28)				
Elongation (extensometer) MD/CMD		%	800 / 800 (700 / 700)				
Strength at yield MD / CMD		N/mm ²	18 / 18 (16 / 16)				
Elongation at yield MD / CMD		%	12 / 12 (10 / 10)				
Puncture resistance	EN ISO 12236	kN	3.2 (2.7)	4.3 (3.7)	5.0 (4.5)	6.0 (5.5)	6.0 (5.5)
Tear strength (Graves)	ISO 34-1	N/mm N	130 (120) 112" (105)	130 (120) 168" (155)	130 (120) 224" (210)	130 (120) 279" (265)	130 (120) 336" (215)
THERMAL PROPERTIES							
Foldability at low temperature	EN 495-5	°C	-30				
Linear thermal expansion coefficient	ASTM D 696	mm/(mm.K)	2.0 E-04				
DURABILITY AND CHEMICAL RESISTANCE							
Resistance to weathering	EN 12224		To be covered within 1 year (reduction of tensile strength and elongation < 25% of original values)				
Resistance to oxidation	EN 14575		Reduction of tensile strength, elongation < 25% of original values reduction of OIT < 45% of original values				
Stress crack resistance	EN 14576 ASTM D 5397	h	≥ 336 durable and resistant for at least 25 years				
Chemical resistance	EN 14414		complied (methods A, B, C, D)				
Resistance to leaching	EN 14415		complied (methods A, B, C)				
Resistance to roots	CEN/TS 14416		complied				
OTHER PROPERTIES							
Carbon black content	EN ISO 11358	%	2-3				
ASTM STANDARDS (TENSILE PROPERTIES)							
Yield strength**	ASTM D 6693 type IV	kN/m	13	19	26	33	39
Break strength**		kN/m	24	36	47	60	72
Yield elongation**		%	12	12	12	12	12
Break elongation**		%	700	700	700	700	700
Tear resistance**	ASTM D 1004	N	112	168	224	279	336
Puncture resistance**	ASTM D 4833	N	288	432	576	720	864

EN 13361, EN 13362, EN 13492, EN 13493, EN 15382

CHARACTERISTIC	TEST METHOD	UNIT	1.0	1.5	2.0	2.5	3.0
Standard OIT	ASTM D 3895	min.	40				
Carbon black dispersion	ASTM D 5596	category	1 or 2 or 3				

* Tolerance +/- 1 % (the same tolerance applies to the length of rolls)

** Min. aver.

Above mentioned data are nominal values and of informative character only. The values in brackets are minimum values. The manufacturer reserves the right to alter the specifications without prior notice. It is the responsibility of all customers to reassure themselves that the above specifications are current.

