

HI-DRILINE® HDPE SMOOTH GEOMEMBRANE LINING (Available from 0.3mm – 3.0mm)

Smooth HI-DRILINE® is a smooth high density polyethylene (HDPE) geomembrane manufactured with the highest quality resin specifically formulated for flexible geomembranes. This product is used in applications that require excellent chemical resistance and endurance properties. These product specifications meet or exceed GRI-GM 13.



Tested Property	Unit	Test Method	Values (*)			
Thickness ^(a)	mm	ASTM D 5199	0.3	0.5	0.75	1.0
Density	g/cm ³	ASTM D 792	≥ 0.94	≥ 0.94	≥ 0.94	≥ 0.94
Tensile Properties ^(b) (min. ave.)		ASTM D 638 / D 6693; Type IV				
Strength at Yield	N/mm	50 mm/min	4	7	11	15
Elongation at Yield	%	lo = 33 mm	12	12	12	13
Strength at Break	N/mm	200 mm/min	8	12	20	27
Elongation at Break	%	lo = 50 mm	650	700	700	700
Tear Resistance (min. ave.)	N	ASTM D 1004	35	65	95	130
Puncture Resistance (min. ave.)	N	ASTM D 4833	96	160	240	320
Carbon Black Content	%	ASTM D 1603	2.0 – 3.0	2.0 – 3.0	2.0 – 3.0	2.0 – 3.0
Carbon Black Dispersion ^(c)	Category	ASTM D 5596	1/2	1/2	1/2	1/2
Dimensional Stability (each Direction)	%	ASTM D 1204 (120°C/1 h)	± 2	± 2	± 2	± 2
Melt Flow Index ^(d)	g/10 min	ASTM D 1238 (190°C / 5.0 kg) (190°C / 2.16 kg)	≤ 3.0 ≤ 1.0	≤ 3.0 ≤ 1.0	≤ 3.0 ≤ 1.0	≤ 3.0 ≤ 1.0
Stress Crack Resistance (NCTL) ^(e)	h	ASTM D 5397; Appendix	≥ 500	≥ 500	≥ 500	≥ 500
Oxidative Induction Time (OIT)	min	ASTM D 3895 (200°C; Pure O ₂ ; 1 atm)	≥ 100	≥ 100	≥ 100	≥ 100
Reference Property						
Low Temperature Brittleness	°C	ASTM D 746	- 77	- 77	- 77	- 77
Oven Aging at 85°C Standard OIT (min. ave.) - % retained after 90 days	%	ASTM D 5721 ASTM D 3895	≥ 55	≥ 55	≥ 55	≥ 55
UV Resistance ^(f) HP-OIT retained after 1,600 hours ^(g)	%	ASTM D 7238 ASTM D 5885	≥ 50	≥ 50	≥ 50	≥ 50
Roll Width (approx.) ^(h)	m	---	7.0		7.0	6.95 / 7 / 7.5 / 8.0
Surface	---	---	Double-sided smooth			

NOTES:

- (*): All values - unless otherwise noted - are nominal values.
- (a): Minimum Average Thickness: Nominal - 5%; lowest individual ± 10% related to the actual average thickness.
- (b): Machine direction (MD) and cross machine direction (XMD) average values should be on the basis of 5 test specimens each direction.
- (c): 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.
- (d): Standard test conditions: 190°C / 5.0 kg.
- (e): The yield stress used to calculate the applied load for the SP-NCTL test should be the manufacturer's mean value via MQC testing.
- (f): Test-Conditions: 20 hours UV cycle at 75°C followed by 4 hours condensation at 60°C; total: 1,600 hours.
- (g): UV Resistance is based on percent retained value regardless of the original High Pressure - OIT value.
- (h): Roll widths and lengths have a tolerance of ± 1%.

The above information is provided for reference purposes only and shall not be construed as a warranty or guarantee. The Manufacturer and Supplier assumes no liability in connection with the use of the information. Specifications are subject to change without notice. All trademarks are registered trademarks of the supplier in the Republic of South Africa.



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Tested Property	Unit	Test Method	Values (*)			
Thickness ^(a)	mm	ASTM D 5199	1.5	2.0	2.5	3.0
Density	g/cm ³	ASTM D 792	≥ 0.94	≥ 0.94	≥ 0.94	≥ 0.94
Tensile Properties ^(b) (min. ave.)		ASTM D 638 / D 6693; Type IV				
Strength at Yield	N/mm	50 mm/min	22	30	37	44
Elongation at Yield	%	lo = 33 mm	13	13	13	13
Strength at Break	N/mm	200 mm/min	40	53	67	80
Elongation at Break	%	lo = 50 mm	700	700	700	700
Tear Resistance (min. ave.)	N	ASTM D 1004	190	250	315	375
Puncture Resistance (min. ave.)	N	ASTM D 4833	480	640	800	960
Carbon Black Content	%	ASTM D 1603	2.0 – 3.0	2.0 – 3.0	2.0 – 3.0	2.0 – 3.0
Carbon Black Dispersion ^(c)	Category	ASTM D 5596	1/2	1/2	1/2	1/2
Dimensional Stability (each Direction)	%	ASTM D 1204 (120°C/1 h)	± 2	± 2	± 2	± 2
Melt Flow Index ^(d)	g/10 min	ASTM D 1238 (190°C / 5.0 kg) (190°C / 2.16 kg)	≤ 3.0 ≤ 1.0	≤ 3.0 ≤ 1.0	≤ 3.0 ≤ 1.0	≤ 3.0 ≤ 1.0
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Oven Aging at 85°C Standard OIT (min. ave.) - % retained after 90 days	%	ASTM D 5721 ASTM D 3895	≥ 55	≥ 55	≥ 55	≥ 55
UV Resistance ^(f) HP-OIT retained after 1,600 hours ^(g)	%	ASTM D 7238 ASTM D 5885	≥ 50	≥ 50	≥ 50	≥ 50
Roll Width (approx.) ^(h)	m	---	6.95 / 7.0 / 7.5 / 8.0		7.0 / 7.5	
Surface	---	---	double-sided smooth			

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