

## Technical Data Sheet HDPE Geomembrane (Hardline)

Hardline is a high density polyethylene geomembrane produced from the most chemically resistant raw materials to provide a long term performance lining material, with high elongation suitable for a variety of applications.

### Smooth Geomembrane

Tested Properties	Unit	Test Method	Values (*)		
Thickness (a)	mm	ASTM D 5199	1.0	1.5	2.0
Density	g/cm <sup>3</sup>	ASTM D 792	≥0.94	≥0.94	≥0.94
<b>Tensile Properties (each direction)</b>		ASTM D 638/ D6693 Type 5			
Strength at Yield	MPa	50mm/min	16 (15)	24 (22)	32 (30)
Elongation at Yield	%	lo=33mm	16 (13)	16 (13)	16 (13)
Strength at Break	MPa	50mm/min	33 (27)	49 (40)	66 (53)
Elongation at Break	%	lo=33mm	800 (700)	800 (700)	800 (700)
Tear Resistance	N	ASTM D 1004	140 (130)	205 (190)	275 (250)
Puncture Resistance	N	ASTM D 4833	420 (320)	560 (480)	690 (640)
Carbon Black Content	%	ASTM D 4218	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)
Dimensional Stability (each direction)	%	ASTM D 1204 (120 °C/1h)	±2	±2	±2
Melt Flow Index (c)	g/10 min	ASTM D 1238 (190°C / 5.0KG) (190°C / 2.16 KG)	≤3.0 ≤1.0	≤3.0 ≤1.0	≤3.0 ≤1.0
Stress Crack Resistance	H	ASTM D 5397; Appendix	≥500	≥500	≥500
Oxidative Induction Time (OIT)	min	ASTM D 3895 (200°C; O <sub>2</sub> ; 1atm)	≥100	≥100	≥100
<b>Reference Property</b>					
Low Temperature Brittleness	°C	ASTM D 746	-77	-77	-77
UV Resistance (d)	%	ASTM D 7238			
HP-OIT retained after 1,600 hours (e)		ASTM D 5885	≥50	≥50	≥50
Roll Width (approx.) (f)	M	-	6.95 / 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%

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