

# GSE UltraFlex Smooth Geomembrane

GSE UltraFlex is a smooth linear low density polyethylene (LLDPE) 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 localized subgrade settlements may occur such as in a landfill closure application.



**AT THE CORE:**  
An LLDPE geomembrane that is used in applications requiring increased flexibility and elongation properties, such as landfill closures and mining applications.

## Product Specifications

These product specifications meet GRI GM17.

Tested Property	Unit	Test Method	Values(*)					
Thickness <sup>(a)</sup>	mm	ASTM D 5199	0.5	0.75	1.0	1.5	2.0	2.5
Density	g/cm <sup>3</sup>	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 IV; 200 mm/min; l <sub>0</sub> = 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 <sup>(b)</sup>	1/2 <sup>(b)</sup>	1/2 <sup>(b)</sup>	1/2 <sup>(b)</sup>	1/2 <sup>(b)</sup>	1/2 <sup>(b)</sup>
Dimensional Stability (each Direction)	%	ASTM D 1204 (100°C/1 h)	± 2	± 2	± 2	± 2	± 2	± 2
Melt Flow Index <sup>(c)</sup>	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	≤ 3.0 ≤ 1.0	≤ 3.0 ≤ 1.0
Oxidative Induction Time (OIT)	min	ASTM D 3895 (200°C; Pure O <sub>2</sub> ; 1 atm)	≥ 100	≥ 100	≥ 100	≥ 100	≥ 100	≥ 100
<b>Reference Property</b>								
Multiaxial Elongation at Break	%	similar to ASTM D 5617; Ø = 500 mm	≥ 30	≥ 30	≥ 30	≥ 30	≥ 30	≥ 30
Low Temperature Brittleness	°C	ASTM D 746	- 77	- 77	- 77	- 77	- 77	- 77
UV Resistance <sup>(d)</sup> HP-OIT retained after 1,600 hours <sup>(e)</sup>	%	ASTM D 7238 ASTM D 5885	≥ 35	≥ 35	≥ 35	≥ 35	≥ 35	≥ 35
Roll Width (approx.) <sup>(f)</sup>	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 within 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 / 5.0 kg.
- (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%.

GSE is a leading manufacturer and marketer of geosynthetic lining products and services. We've built a reputation of reliability through our dedication to providing consistency of product, price and protection to our global customers.

Our commitment to innovation, our focus on quality and our industry expertise allow us the flexibility to collaborate with our clients to develop a custom, purpose-fit solution.



**[ DURABILITY RUNS DEEP ]** For more information on this product and other, please visit us at [GSEworld.com](http://GSEworld.com), call 49.40.767420 or contact your local sales office.

