

# GSE High Temperature Geomembrane

## METRIC

GSE High Temperature Geomembrane is a specially engineered HDPE geomembrane that is able to retain its mechanical and physical properties when exposed to temperatures up to 100°C. It is an innovative formulation that takes advantage of the high temperature performance of revolutionary resins and the thermal stability of GSE's proprietary stabilization package. It provides enhanced mechanical performance and improved chemical stability at elevated temperatures in addition to the traditional properties of polyethylene geomembranes.



**AT THE CORE:**  
An HDPE geomembrane used in applications that operate at sustained temperatures up to 100°C.

### Product Specifications

Tested Property	Test Method	Frequency	Nominal Value <sup>(1,2)</sup>			
			1.5 mm	2.0 mm	2.5 mm	3.0 mm
Thickness, mm	ASTM D 5199	every roll	1.5	2.0	2.5	3.0
Density, g/cm <sup>3</sup>	ASTM D 1505	90,000 kg	≥ 0.940	≥ 0.940	≥ 0.940	≥ 0.940
Tensile Properties (each direction) Strength at Break, N/mm Strength at Yield, N/mm Elongation at Break, % Elongation at Yield, %	ASTM D 6693, Type IV Dumbbell, 2 ipm  G.L. 50 mm G.L. 33 mm	9,000 kg	49 (40) 24 (22) 700 (600) 15 (12)	66 (53) 32 (30) 700 (600) 15 (12)	83 (67) 40 (37) 700 (600) 15 (12)	83 (67) 40 (37) 700 (600) 15 (12)
Tear Resistance, N	ASTM D 1004	20,000 kg	205 (190)	275 (250)	350 (315)	420 (375)
Puncture Resistance, N	ASTM D 4833	20,000 kg	560 (480)	690 (640)	830 (800)	980 (960)
Carbon Black Content, % (Range)	ASTM D 4218	9,000 kg	2.0 - 3.0	2.0 - 3.0	2.0 - 3.0	2.0 - 3.0
Carbon Black Dispersion	ASTM D 5596	20,000 kg	Note <sup>(3)</sup>	Note <sup>(3)</sup>	Note <sup>(3)</sup>	Note <sup>(3)</sup>
Oxidative Induction Time, min	ASTM D 3895, 200°C; O <sub>2</sub> , 1 atm	90,000 kg	≥ 100	≥ 100	≥ 100	≥ 100
High Pressure Oxidation Induction Time (HPOIT), min	ASTM D 5885, 150°C; O <sub>2</sub> , 3.4 Mpa	per formulation	≥ 600	≥ 600	≥ 600	≥ 600
<b>Reference Property</b>						
Tensile Properties @ 100°C (each direction) Strength at Yield, Mpa Elastic Modulus, Mpa	ISO 527, 1/2	per formulation	≥ 5 ≥ 38	≥ 5 ≥ 38	≥ 5 ≥ 38	≥ 5 ≥ 38
Stress Crack Resistance <sup>(4)</sup> @ 80°C (SP-NCTL), h	ASTM D 5397 (modified)	per formulation	≥ 500	≥ 500	≥ 500	≥ 500
Oven Aging HPOIT retained after 6 mo.	ASTM D 5721/5884	per formulation	≥ 80%	≥ 80%	≥ 80%	≥ 80%
100°C Oven Aging HPOIT <sup>(5)</sup> retained after 90 days	ASTM D 5721 (modified)/5885	per formulation	≥ 80%	≥ 80%	≥ 80%	≥ 80%
UV resistance HPOIT retained after 3500 hours	ASTM D 7238/5885	per formulation	≥ 50%	≥ 50%	≥ 50%	≥ 50%
<b>Typical Roll Dimensions</b>						
Roll Length <sup>(6)</sup> , m			130	100	80	70
Roll Width <sup>(6)</sup> , m			7.5	7.5	7.5	7.5
Roll Area, m <sup>2</sup>			975	750	600	525

NOTES:

- <sup>(1)</sup>All GSE geomembranes have dimensional stability of ±2% when tested according to ASTM D 1204 and LTB of <-77°C when tested according to ASTM D 746.
- <sup>(2)</sup>All values unless otherwise notes are nominal values. Values in brackets are minimum average values within 95% confidence interval.
- <sup>(3)</sup>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.
- <sup>(4)</sup>NCTL is tested according to ASTM D5397, but modified to 80°C and 3.4 Mpa (500 psi) stress.
- <sup>(5)</sup>GSE High Temperature Geomembrane is tested for HPOIT retention after incubation in elevated oven temperatures (100°C) for 90 days.
- <sup>(6)</sup>Roll lengths and widths 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 others, please visit us at [GSEworld.com](http://GSEworld.com), call 800.435.2008 or contact your local sales office.