

# GSE HD FrictionFlex Geomembrane (Double-Sided)

GSE HD FrictionFlex is a spray-on texture version of GSE HD. It is a high density polyethylene (HDPE) geomembrane that is textured on both sides using GSE's patented texturing process and manufactured with the highest quality resin specifically formulated for flexible geomembranes. This process is the only one that produces a textured material without significant reduction of any physical properties. The product is used in applications that require excellent chemical resistance and endurance properties.



**AT THE CORE:**  
A spray-on textured version of GSE HD geomembrane suitable for applications that require excellent chemical resistance and endurance properties.

## Product Specifications

These product specifications meet or exceed GRI GM13.

Tested Property	Test Method	Frequency	Minimum Average Value				
Thickness, (minimum average) mm (mil) Lowest individual reading, mm (mil)	ASTM D 5994	every roll	0.75 (30) 0.68 (27)	1.0 (40) 0.9 (36)	1.5 (60) 1.35 (54)	2.0 (80) 1.8 (72)	2.5 (100) 2.25 (90)
Density, g/cm <sup>3</sup>	ASTM D 1505	every 5th roll	0.94	0.94	0.94	0.94	0.94
Tensile Properties (each direction) Strength at Break, N/mm-width (lb/in) Strength at Yield, N/mm-width (lb/in) Elongation at Break, % Elongation at Yield, %	ASTM D 6693, Type IV Dumbbell, 2 ipm  G.L. 51 mm (2.0 in) G.L. 33 mm (1.3 in)	every 5th roll	17 (97) 11 (63) 600 13	24 (137) 14 (80) 600 13	37 (211) 23 (131) 600 13	48 (274) 30 (171) 600 13	60 (343) 38 (217) 600 13
Tear Resistance, N (lb)	ASTM D 1004	every 5th roll	93 (21)	125 (28)	187 (42)	249 (56)	311 (70)
Puncture Resistance, N (lb)	ASTM D 4833	every 5th roll	263 (59)	352 (79)	530 (119)	703 (158)	881 (198)
Carbon Black Content, %	ASTM D 1603 / D 4218	every 5th roll	2.0 - 3.0	2.0 - 3.0	2.0 - 3.0	2.0 - 3.0	2.0 - 3.0
Carbon Black Dispersion	ASTM D 5596	every 5th roll	Note <sup>(1)</sup>	Note <sup>(1)</sup>	Note <sup>(1)</sup>	Note <sup>(1)</sup>	Note <sup>(1)</sup>
Asperity Height	ASTM D 7466	every second roll	Note <sup>(2)</sup>	Note <sup>(2)</sup>	Note <sup>(2)</sup>	Note <sup>(2)</sup>	Note <sup>(2)</sup>
Notched Constant Tensile Load, hrs	ASTM D 5397, Appendix	90,000 kg	400	400	400	400	400
Oxidative Induction Time, minutes	ASTM D 3895, 200° C; O <sub>2</sub> , 1 atm	90,000 kg	> 100	>100	>100	>100	>100
<b>TYPICAL ROLL DIMENSIONS</b>							
Roll Length <sup>(3)</sup> , m (ft)			250 (820)	200 (656)	100 (328)	80 (262)	60 (197)
Roll Width <sup>(3)</sup> , m (ft)			7.0 (23)	7.0 (23)	7.0 (23)	7.0 (23)	7.0 (23)
Roll Area, m <sup>2</sup> (ft <sup>2</sup> )			1,750 (18,860)	1,400 (15,088)	700 (7,544)	560 (6,026)	420 (4,531)
40' Standard Container, roll			9	9	16	16	16

NOTES:

- <sup>(1)</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>(2)</sup>0.25 mm average. 8 of 10 readings ≥0.18 mm. Lowest individual ≥0.13 mm.
- <sup>(3)</sup>Roll lengths and widths have a tolerance of ±1%.
- GSE HD Standard Textured is provided in rolls weighing approximately 1,150 kg (2,535 lb) each.
- All GSE geomembranes have dimensional stability of ±2% when tested with ASTM D 1204 and LTB of <-77° C when tested with ASTM D 746.
- Alternate the measurement side for double-sided textured sheet.

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.