

# GSE HD FrictionFlex Geomembrane (Single-Sided)

## METRIC

GSE HD FrictionFlex is a spray-on texture version of GSE HD. It is a high density polyethylene (HDPE) geomembrane that is textured on one side 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				
Product Code			HSF-075AM-BBB-W-00	HSF-100AM-BBB-W-00	HSF-150AM-BBB-W-00	HSF-200AM-BBB-W-00	HSF-250AM-BBB-W-00
Thickness (minimum average), mm Lowest individual reading, mm	ASTM D 5994	every roll	0.75 0.68	1.00 0.90	1.50 1.35	2.00 1.80	2.50 2.25
Density, g/cm <sup>3</sup>	ASTM D 1505 / D 792	every 5th roll	0.94	0.94	0.94	0.94	0.94
Tensile Properties (each direction) Strength at Break, N/mm-width Strength at Yield, N/mm-width Elongation at Break, % Elongation at Yield, %	ASTM D 6693, Type IV Dumbbell, 50 mm/min  G.L. 51 mm G.L. 33 mm	every 5th roll	17 11 600 13	24 15 600 13	37 23 600 13	48 30 600 13	60 38 600 13
Tear Resistance, N	ASTM D 1004	every 5th roll	93	125	187	249	311
Puncture Resistance, N	ASTM D 4833	every 5th roll	263	352	530	670	840
Carbon Black Content, % (Range)	ASTM D 4218 / D 1603	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	0.40	0.40	0.40	0.40	0.40
Notched Constant Tensile Load <sup>(2)</sup> , hours	ASTM D 5397, Appendix	90,000 kg	500	500	500	500	500
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			250	200	100	80	60
Roll Width <sup>(3)</sup> , m			7.0	7.0	7.0	7.0	7.0
Roll Area, m <sup>2</sup>			1,750	1,400	700	560	420
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 Categories 1 or 2. No more than 1 view from Category 3.
- <sup>(2)</sup> NCTL for GSE HD FrictionFlex is conducted on representative smooth geomembrane samples or smooth edges of spray-on textured rolls using ASTM D5397(Appendix). This test method is not appropriate for testing geomembranes with texture, even single side texture or irregular rough surfaces. The yield stress used to calculate the applied load for the NCTL test shall be cut from the same sample and same direction as the specimens for NCTL test.
- <sup>(3)</sup> Roll lengths and widths have a tolerance of ±1%.
- GSE HD FrictionFlex is available in rolls weighing approximately 1,050 - 1,430 kg.
- 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.

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 66.2.937.0091 or contact your local sales office.