



GSE STANDARD PRODUCTS

# Product Data Sheet

## GSE White Textured Geomembranes

GSE White Textured is the textured version of GSE White. It is a high quality, high density polyethylene (HDPE) geomembrane with one or two coextruded, textured surfaces. It has a UV-stabilized, white upper surface that is approximately 3 mils (0.125 mm) thick. This layer is part of the total thickness, the remainder of which is a carbon black stabilized primary layer. The light reflective surface improves detection of post-installation damage and reduces heat buildup on the liner by reflecting solar energy. Reducing liner temperature leads to fewer wrinkles and less subgrade desiccation. This textured product provides enhanced interface friction with adjoining materials. *These product specifications meet or exceed GRI GM13.*

### Product Specifications

**GSE Advantage Products**

GSE GundSeal • GSE Conductive • GSE White • GSE PermaNet • GSE BioDrain System

TESTED PROPERTY	TEST METHOD	FREQUENCY	MINIMUM VALUE			
Product Code			HDT 040G010	HDT 060G010	HDT 080G010	HDT 100G010
Thickness, (minimum average) mil (mm)	ASTM D 5994	every roll	38 (0.96)	57 (1.45)	76 (1.93)	95 (2.41)
Lowest individual for 8 out of 10 values			36 (0.91)	54 (1.40)	72 (1.80)	90 (2.30)
Lowest individual for any of the 10 values			34 (0.86)	51 (1.30)	68 (1.73)	85 (2.16)
Density <sup>(4)</sup> , g/cm <sup>3</sup>	ASTM D 1505	200,000 lb	0.94	0.94	0.94	0.94
Tensile Properties (each direction) <sup>(1)</sup>	ASTM D 6693, Type IV Dumbbell, 2 ipm	20,000 lb				
Strength at Break, lb/in-width (N/mm)			60 (11)	90 (16)	120 (21)	150 (27)
Strength at Yield, lb/in-width (N/mm)			84 (15)	126 (22)	168 (29)	210 (37)
Elongation at Break, %	G.L. = 2.0 in (51 mm)		100	100	100	100
Elongation at Yield, %	G.L. = 1.3 in (33 mm)		12	12	12	12
Tear Resistance, lb (N)	ASTM D 1004	45,000 lb	28 (125)	42 (187)	56 (249)	70 (311)
Puncture Resistance, lb (N)	ASTM D 4833	45,000 lb	60 (267)	90 (400)	120 (534)	150 (667)
Carbon Black Content <sup>(2) (4)</sup> , %	ASTM D 1603*/4218	20,000 lb	2.0	2.0	2.0	2.0
Carbon Black Dispersion	ASTM D 5596	45,000 lb	+Note 1	+Note 1	+Note 1	+Note 1
Asperity Height	GRI GM 12	second roll	+Note 2	+Note 2	+Note 2	+Note 2
Notched Constant Tensile Load <sup>(3)</sup> , hr	ASTM D 5397, Appendix	200,000 lb	300	300	300	300
REFERENCE PROPERTY	TEST METHOD	FREQUENCY	NOMINAL VALUE			
Oxidative Induction Time <sup>(4)</sup> , min	ASTM D 3895, 200° C; O <sub>2</sub> , 1 atm	200,000 lb	>100	>100	>100	>100
Roll Length <sup>(5)</sup> (approximate), ft (m)			700 (213)	520 (158)	400 (122)	330 (101)
Roll Width <sup>(5)</sup> , ft (m)			22.5 (6.9)	22.5 (6.9)	22.5 (6.9)	22.5 (6.9)
Roll Area, ft <sup>2</sup> (m <sup>2</sup> )			15,750 (1,463)	11,700 (1,087)	9,000 (836)	7,425 (690)

#### NOTES:

- +Note 1: Dispersion only applies to near spherical agglomerates. 9 or 10 views shall be Category 1 or 2. No more than 1 view from Category 3.
- +Note 2: 10 mil average. 8 of 10 readings ≥7 mils. Lowest individual ≥ 5 mils.
- GSE White Textured is available in rolls weighing about 4,000 lb (1,800 kg).
- <sup>(1)</sup>The combination of stress concentrations due to coextrusion texture geometry and the small specimen size results in large variation of test results. Therefore, these tensile properties are minimum average values.
- <sup>(2)</sup>GSE White Textured may have an overall ash content greater than 3.0% due to the white layer.
- <sup>(3)</sup>NCTL is conducted on representative smooth membrane samples.
- All GSE geomembranes have dimensional stability of ±2% when tested with ASTM D 1204 and ITB of <77° C when tested with ASTM D 746.
- <sup>(4)</sup>The values apply to the black layer only.
- <sup>(5)</sup>Roll lengths and widths have a tolerance of ± 1%.
- \*Modified.

DS015 Whtext R01/07/08

This information is provided for reference purposes only and is not intended as a warranty or guarantee. GSE assumes no liability in connection with the use of this information. Please check with GSE for current, standard minimum quality assurance procedures and specifications.

GSE and other trademarks in this document are registered trademarks of GSE Lining Technology, Inc. in the United States and certain foreign countries.

<b>North America</b>	GSE Lining Technology, Inc.	Houston, Texas	800.435.2008	281.443.8564	Fax: 281.230.6739
<b>South America</b>	GSE Lining Technology Chile S.A.	Santiago, Chile		56.2.595.4200	Fax: 56.2.595.4290
<b>Asia Pacific</b>	GSE Lining Technology Company Limited	Bangkok, Thailand		66.2.937.0091	Fax: 66.2.937.0097
<b>Europe &amp; Africa</b>	GSE Lining Technology GmbH	Hamburg, Germany		49.40.767420	Fax: 49.40.7674234
<b>Middle East</b>	GSE Lining Technology-Egypt	The 6th of October City, Egypt		20.2.828.8888	Fax: 20.2.828.8889