



The Pioneer Of Geosynthetics

S I N C E 1 9 7 2

HIGH PERFORMANCE GSE HD TEXTURED GEOMEMBRANE

High Performance GSE HD Textured is a co-extruded high density polyethylene (HDPE) geomembrane specifically designed to be used in the most stringent applications. A textured surface is available on one or both sides for applications that require increased frictional resistance. The surface characteristics of the texture can be varied on each side of the geomembrane. This product contains only the finest raw materials to enable exceptional elasticity, environmental stress crack resistance, and excellent multi-axial break resistance. Included in this product is a custom additive package that has been engineered to enable extended geomembrane lifetime and improved resilience in elevated temperatures, hazardous waste containment, or a harsh chemical environment. In addition to a superior UV stabilization package, a well-dispersed premium grade of carbon black is utilized to deliver superb UV resistance in exposed applications.

Product Specifications

These product specifications exceed GRI GM 13.

TESTED PROPERTY	TEST METHOD	FREQUENCY	MINIMUM AVERAGE VALUE				
			30 mil	40 mil	60 mil	80 mil	100 mil
Thickness, (minimum average) mil (mm) Lowest individual reading (-10%)	ASTM D 5994	every roll	30 (0.75) 27 (0.69)	40 (1.00) 36 (0.91)	60 (1.50) 54 (1.40)	80 (2.00) 72 (1.80)	100 (2.50) 90 (2.30)
Density, g/cm ³	ASTM D 1505	200,000 lb	0.94	0.94	0.94	0.94	0.94
Tensile Properties (each direction) Strength at Break, lb/in-width (N/mm) Strength at Yield, lb/in-width (N/mm) Elongation at Break, % Elongation at Yield, %	ASTM D 6693, Type IV Dumbbell, 2 ipm G.L. 2.0 in (51 mm) G.L. 1.3 in (33 mm)	20,000 lb	66 (11) 68 (11) 200 13	75 (13) 90 (15) 200 13	115 (20) 132 (23) 200 13	155 (27) 177 (31) 200 13	230 (40) 225 (39) 200 13
Tear Resistance, lb (N)	ASTM D 1004	45,000 lb	24 (106)	32 (142)	45 (200)	60 (266)	75 (333)
Puncture Resistance, lb (N)	ASTM D 4833	45,000 lb	65 (289)	95 (422)	130 (578)	160 (711)	190 (845)
Multi-axial Break Resistance, %	ASTM D 5617	per formulation	15	15	15	15	15
Carbon Black Content, % (Range)	ASTM D 1603*/4218	20,000 lb	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	45,000 lb	Note ⁽¹⁾	Note ⁽¹⁾	Note ⁽¹⁾	Note ⁽¹⁾	Note ⁽¹⁾
Asperity Height ⁽²⁾ , mil (mm)	ASTM D 7466	second roll	16 (0.40)	18 (0.45)	18 (0.45)	18 (0.45)	18 (0.45)
Notched Constant Tensile Load ⁽³⁾ , hr	ASTM D 5397, Appendix	200,000 lb	1,000	1,000	1,000	1,000	1,000
Oxidative Induction Time, mins	ASTM D 3895, 200°C; O ₂ , 1 atm	200,000 lb	>160	>160	>160	>160	>160
High Pressure Oxidative Induction Time, mins	ASTM D 5885, 150°C; O ₂ , 3.4 MPa	per formulation	>800	>800	>800	>800	>800
Oven aging at 85°C High Pressure OIT (min. avg.) - % retained after 90 days	ASTM D 5721 ASTM D 5885	per formulation	80	80	80	80	80
UV Resistance High Pressure OIT (min. avg.) - % retained after 1,600 hours	GM 11 ASTM D 5885	per formulation	80	80	80	80	80
TYPICAL ROLL DIMENSIONS							
Roll Length ⁽⁴⁾ , ft (m)	Double-Sided Textured	830 (253)	700 (213)	520 (158)	400 (122)	330 (101)	
	Single-Sided Textured	840 (256)	650 (198)	420 (128)	320 (98)	250 (76)	
Roll Width ⁽⁴⁾ , ft (m)		22.5 (6.86)	22.5 (6.86)	22.5 (6.86)	22.5 (6.86)	22.5 (6.86)	
Roll Area, ft ² (m ²)	Double-Sided Textured	18,675 (1,735)	15,750 (1,463)	11,700 (1,087)	9,000 (836)	7,425 (690)	
	Single-Sided Textured	18,900 (1,755)	14,625 (1,359)	9,450 (878)	7,200 (669)	5,625 (523)	

NOTES:

- ⁽¹⁾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.
- ⁽²⁾Consult GSE for information regarding asperity heights exceeding the specified values.
- ⁽³⁾NCTL for High Performance GSE HD Textured is conducted on representative smooth geomembrane samples.
- ⁽⁴⁾Roll lengths and widths have a tolerance of ± 1%.
- High Performance GSE HD Textured is available in rolls weighing approximately 3,900 lb (1,769 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.
- *Modified.

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