



GSE HD Textured

Product Data Sheet

GSE HD Textured is a coextruded double-sided or single-sided textured, black, high quality, high density polyethylene (HDPE) geomembrane, produced from specially formulated polyethylene resin. The polyethylene resin is designed specifically for flexible and durable geomembrane applications. GSE HD Textured contains approximately 97.5% polyethylene, 2.5% carbon black and trace amounts of antioxidants and heat stabilizers. GSE HD Textured has outstanding chemical resistance, mechanical properties, environmental stress crack resistance, dimensional stability and thermal aging characteristics. GSE HD Textured has excellent resistance to UV radiation and is suitable for exposed applications. This product allows the design of projects with steeper slopes since frictional characteristics are enhanced. These product specifications meet or exceed GRI-GM 13.

Tested Property	Unit	Test Method	Values			
			0.75	1.0	1.5	2.0
Thickness ^(a) (Core Thickness)	mm	ASTM D 5994	0.75	1.0	1.5	2.0
Density (Minimum Average)	g/cm ³	ASTM D 792	0.94	0.94	0.94	0.94
Tensile Properties (each Direction) (Minimum Average)		ASTM D 638 / D 6693; type IV				
Strength at Yield	N/mm	50 mm/min	11	15	22	30
Elongation at Yield	%	lo = 33 mm	12	13	13	13
Strength at Break	N/mm	200 mm/min	8	10	16	21
Elongation at Break	%	lo = 50 mm	100	100	100	100
Tear Resistance (Minimum Average)	N	ASTM D 1004	95	130	190	250
Puncture Resistance (Minimum Average)	N	ASTM D 4833	200	267	400	534
Carbon Black Content	%	ASTM D 1603	2.0 – 3.0	2.0 – 3.0	2.0 – 3.0	2.0 – 3.0
Carbon Black Dispersion	Category	ASTM D 5596	1 / 2 ^(b)	1 / 2 ^(b)	1 / 2 ^(b)	1 / 2 ^(b)
Dimensional Stability (each Direction)	%	ASTM D 1204 (120 °C/1h)	± 2	± 2	± 2	± 2
Melt Flow Index ^(c)	g/10 min	ASTM D 1238 (190 °C / 5.0 kg) (190 °C / 2.16 kg)	≤ 3.0 ≤ 1.0	≤ 3.0 ≤ 1.0	≤ 3.0 ≤ 1.0	≤ 3.0 ≤ 1.0
Stress Crack Resistance (NCTL) ^(d)	h	ASTM D 5397; Appendix	≥ 400	≥ 400	≥ 400	≥ 400
Asperity Height (each Side) (Minimum Average)	mm	GRI-GM 12	0.25 ^(e)	0.25 ^(e)	0.25 ^(e)	0.25 ^(e)
Oxidative Induction Time (OIT)	min	ASTM D 3895 (200°C; Pure O ₂ ; 1 atm)	≥ 100	≥ 100	≥ 100	≥ 100

Reference Property	Unit	Test Method	Values			
			-77	-77	-77	-77
Low Temperature Brittleness	°C	ASTM D 746	-77	-77	-77	-77
UV Resistance ^(f)		GRI-GM 11				
HP-OIT retained after 1,600 hours ^(g)	%	ASTM D 5885	≥ 50	≥ 50	≥ 50	≥ 50
Roll Width (approx.) ^(h)	m	---	6.95			
Surface	---	---	single-sided or double-sided coextruded textured			

- (a): Minimum average: - 5%, lowest individual for 8 out of 10: - 10%, lowest individual: - 15% - Special thickness available upon request.
 (b): 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.
 (c): Standard test conditions: 190 °C / 5.0 kg.
 (d): Note: NCTL is conducted on representative smooth membrane samples.
 (e): 8 out of 10 readings must be ≥ 0.18 mm and lowest individual reading must be ≥ 0.13 mm.
 (f): Test conditions: 20 hours UV cycle at 75°C followed by 4 hours condensation at 60°C; total: 1,600 hours.
 (g): UV Resistance is based on percent retained value regardless of the original High Pressure - OIT value.
 (h): Roll widths and lengths have a tolerance of ± 1%.



GSE HD Textured is produced at GSE Rechlin plant, Germany.



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