



## Hi-DRILINE® Textured (HDPE) (MRS/DRS) - Product Data Sheet : Spray-On

Hi-DRILINE® Textured (HDPE)(MRS/DRS) is a single-sided (FrictionFlex single-sided) or double-sided (FrictionFlex) textured, black, high quality, high density polyethylene (HDPE) geomembrane produced from specially formulated, virgin polyethylene resin. The polyethylene resin is designed specifically for flexible and durable geomembrane applications Hi-DRILINE® Textured (HDPE)(MRS/DRS) contains approximately 97.5% polyethylene, 2.5% carbon black and trace amounts of antioxidants and heat stabilizers. Our patented texturing process is the only manufacturing method that provides a textured geomembrane without significant reduction of any of the physical properties of the smooth product. Hi-DRILINE® Textured (HDPE)(MRS/DRS) has outstanding chemical resistance, mechanical properties, environmental stress crack resistance, dimensional stability and thermal aging characteristics. Hi-DRILINE® Textured (HDPE)(MRS/DRS) 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 and the smooth edges (width approx 15cm) allow for an easier, quicker welding process according to the state of the art. These product specifications meet or exceed GRI-GM13.

Tested Property	Unit	Test Method	Values (*)				
			1.0	1.5	2.0	2.5	3.0
Thickness (a)	mm	ASTM D 5994	1.0	1.5	2.0	2.5	3.0
Density	g/cm <sup>3</sup>	ASTM D 792	≥0.94	≥0.94	≥0.94	≥0.94	≥0.94
Tensile Properties (each Direction)		ASTM D 638/ D6693; type IV					
Strength at Yield	N/mm	50 mm/min	16 <sup>(15)</sup>	24 <sup>(22)</sup>	32 <sup>(30)</sup>	40 <sup>(37)</sup>	48 <sup>(45)</sup>
Elongation at Yield	%	lo = 33 mm	16 <sup>(13)</sup>	16 <sup>(13)</sup>	16 <sup>(13)</sup>	16 <sup>(13)</sup>	16 <sup>(13)</sup>
Strength at Break	N/mm	200 mm/min	33 <sup>(27)</sup>	49 <sup>(40)</sup>	66 <sup>(53)</sup>	83 <sup>(67)</sup>	100 <sup>(80)</sup>
Elongation at Break	%	lo = 50 mm	800 <sup>(700)</sup>	800 <sup>(700)</sup>	800 <sup>(700)</sup>	800 <sup>(700)</sup>	800 <sup>(700)</sup>
Tear Resistance	N	ASTM D1004	140 <sup>(130)</sup>	205 <sup>(190)</sup>	275 <sup>(250)</sup>	350 <sup>(315)</sup>	420 <sup>(375)</sup>
Puncture Resistance	N	ASTM D 4833	420 <sup>(320)</sup>	560 <sup>(480)</sup>	690 <sup>(640)</sup>	830 <sup>(800)</sup>	980 <sup>(960)</sup>
Carbon Black Content	%	ASTM D 1603	2.0 - 3.0	2.0 - 3.0	2.0 - 3.0	2.0 - 3.0	2.0 - 3.0
Carbon Black Dispersion	Category	ASTM 0 5596	1/2 (b)	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	± 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	≤ 3.0 ≤ 1.0
Stress Crack Resistance (NCTL)	h	ASTM D 5397; Appendix	≥ 400	≥ 400	≥ 400	≥ 400	≥ 400
Asperity height (each side) (Minimum average)	mm	GRI-GM12	0.25 <sup>(d)</sup>	0.25 <sup>(d)</sup>	0.25 <sup>(d)</sup>	0.25 <sup>(d)</sup>	0.25 <sup>(d)</sup>
Reference Property	Unit	Test Method	Values (*)				
Low Temperature Brittleness	°C	ASTM D 746	-77	-77	-77	-77	-77
Oxidative Induction Time (OIT)	min	ASTM D 3895 (200°C; Pure O <sub>2</sub> ; 1 atm)	≥ 100	≥ 100	≥ 100	≥ 100	≥ 100
UV Resistance (e) HP-OIT retained after 1,600 hours (f)	%	GRI-GM 11 ASTM D 5885	≥ 50	≥ 50	≥ 50	≥ 50	≥ 50
Roll Width (approx.)	m	-	7.5				
Surface	-	-	single-sided or double-sided textured				

(\*): All values – unless otherwise noted – are nominal values. Values in brackets are minimum values within the 95% confidence interval.

(a): Tolerance ±10% - 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): 8 out of 10 readings must be  $\geq 0.18$  mm and lowest individual reading must be  $\geq 0.13$  mm.
- (e): Test conditions: 20 hours UV cycle at 75°C followed by 4 hours condensation at 60°C; total: 1,600 hours.
- (f): UV Resistance is based on percent retained value regardless of the original High Pressure-OIT value.

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