



# HDPE Geomembrane : Black Smooth

Product Specifications / Data Sheet

**GPF's HDPE Smooth Geomembrane** is a high quality, black coloured product that is manufactured in our state of the art Saudi Arabian facility. GPF uses 97.5% pure high density polyethylene virgin polymer and 2.5% carbon black with trace amounts of antioxidants and heat stabilizers.

**GPF's HDPE Smooth Textured Geomembrane** is UV stabilized, highly resistant to chemicals, dimensionally stable with exceptional durability including high puncture and stress crack resistance.

**GPF's HDPE Smooth Textured Geomembrane** exceeds the industry standard GRI GM13, as regularly tested in our full laboratory integrated into our factory and also as certified by multiple international independent expert plastics and polymer laboratories including TRI Environmental and Excelplas.

Test Property	Unit	Test Method	Minimum Average Value (per GRI GM13)						
Thickness <sup>(1)</sup>	mm	ASTM D 5199	0.75	1.0	1.5	2.0	2.5	3.0	
Lowest individual (-10%)	mils		30	40	60	80	100	120	
Density	g/cm <sup>3</sup>	ASTM D 792	≥ 0.94	≥ 0.94	≥ 0.94	≥ 0.94	≥ 0.94	≥ 0.94	
Strength at Yield (Both Directions)	N/mm	ASTM D 6693	11	15	22	29	37	44	
Strength at Break (Both Directions)	N/mm	Type IV Dumbbell, 50mm/min	20	27	40	53	67	80	
Elongation at Yield (Both Directions)	%	Gage length 33 mm for Yield Elongation	12	12	12	12	12	12	
Elongation at Break (Both Directions)	%	Gage length 50mm for Break Elongation	700	700	700	700	700	700	
Tear Resistance	N	ASTM D 1004	93	125	187	249	311	374	
Puncture Resistance	N	ASTM D 4833	240	320	480	640	800	960	
Carbon Black Content	%	ASTM D 1603	2.0% - 3.0%						
Carbon Black Dispersion	Category	ASTM D 5596	Note (2)						
Dimensional Stability	%	ASTM D 1204 (120 °C / 1 h)	± 2	± 2	± 2	± 2	± 2	± 2	
Melt Flow Index <sup>(3)</sup>	g/10 min	ASTM D 1238 (190 °C / 2.16 kg)	≤ 1	≤ 1	≤ 1	≤ 1	≤ 1	≤ 1	
Low Temperature Brittleness	°C	ASTM D 746	-77	-77	-77	-77	-77	-77	
Stress Crack Resistance (NCTL)	hr.	ASTM D 5397	≥ 500	≥ 500	≥ 500	≥ 500	≥ 500	≥ 500	
Oxidative Induction Time (Standard; S-OIT)	min	ASTM D 3895	100	100	100	100	100	100	
Oxidative Induction Time (High Pressure; HP-OIT)	min	ASTM D 5885	400	400	400	400	400	400	

## Roll dimensions

### Size A)

Roll Width (approx.) <sup>(4)</sup>	m	-----	7	7	7	7	7	7
Roll Length (approx.)	m	-----	305	230	150	115	90	75
Roll Area (approx.)	m <sup>2</sup>	-----	2,135	1,610	1,050	805	630	525

### Size B)

Roll Width (approx.) <sup>(4)</sup>	m	-----	8	8	8	8	8	8
Roll Length (approx.)	m	-----	270	200	135	100	80	65
Roll Area (approx.)	m <sup>2</sup>	-----	2,160	1,600	1,080	800	640	520

Notes:

(1) One (1) measurement taken every 1 meter along roll width - 10% lowest individual of 10 values.

(2) Carbon black dispersion (only near spherical agglomerates) for 10 different views: 9 in Categories 1 or 2 and 1 in Category 3.

(3) Standard test conditions: 190 °C / 2.16 kg.

(4) Roll Width and Length have a tolerance of ± 1%.

**GECAT Plastic Factory Ltd**

**Main office and Factory**

Dammam 2nd Industrial City, Street #116

Dammam, Saudi Arabia

**Tel:** +966 13 802 0788

**Fax:** +966 13 802 0729

**Email:** [info@gpf.ltd](mailto:info@gpf.ltd)

**Website:** [www.gpf.ltd](http://www.gpf.ltd)