



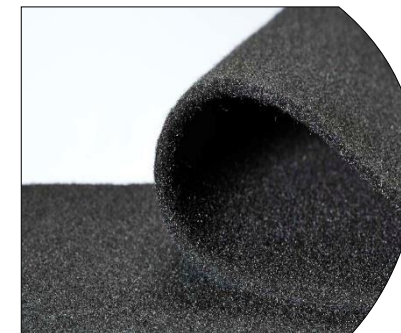
# HPS (High Performance Square) nonwoven geotextiles

**1. DESCRIPTION** Thick needlepunched nonwoven geotextiles manufactured from 100% virgin polypropylene high tenacity fibres containing 1% active carbon black

**2. APPLICATIONS** Typical applications for Geofabrics' HPS Geotextiles include, but are not limited to:

- Membrane protection in landfill cells and cover systems
- Soil filtration and separation beneath rock armour in coastal defence
- Soil filtration within landfill cells
- Heavy duty soil filters in civil applications

- 3. FEATURES**
- Optimised for maximum strength and performance – not mass
  - Available in wide widths to allow for minimal construction costs – up to 6.56yd
  - Manufactured from a unique blend of high tenacity fibres providing class leading durability
  - 100% virgin polypropylene fibres for guaranteed durability
  - Carbon black for UV stability



Test	Unit	MEAN VALUES													
		HPS2	HPS3	HPS4	HPS5	HPS6	HPS7	HPS8	HPS9	HPS11	HPS12	HPS14	HPS17	HPS19	
<b>4. MECHANICAL PROPERTIES</b>															
Static Puncture (CBR)	ASTM D 6241-04	lbf	450	674	899	1124	1349	1574	1798	2023	2473	2698	3147	3822	4271
Plunger Displacement		inches	3	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6
Tensile Strength (MD/CMD)	ASTM D 4595	lbf/in	57	114	143	171	200	228	257	286	343	371	428	514	571
Tensile Elongation (MD/CMD)		%	80	80	80	80	80	80	80	80	80	80	80	80	80
Puncture Resistance	ASTM D 4833-07	lbf	68	90	124	158	191	225	248	259	326	360	405	563	608
Grab Breaking Load	ASTM D 4632	lbf	225	293	360	450	518	585	653	720	855	923	1058	1260	1395
Trapezoidal Tear Strength	ASTM D 4533-04	lbf	113	135	158	180	203	225	248	270	315	338	383	450	495
<b>5. FILTER PROPERTIES</b>															
Apparent Opening Size	ASTM D 4751	mm	0.35	0.20	0.20	0.15	0.11	0.11	0.10	0.10	0.08	0.06	0.06	0.06	0.06
Water Permeability	ASTM D 4491	gal/yd <sup>2</sup> /s	22	19	17	14	12	11	10	9	8	7	6	3	2
<b>6. PHYSICAL PROPERTIES</b>															
Thickness @ 2kPa	ASTM D 5199	inches	0.14	0.15	0.17	0.19	0.20	0.22	0.23	0.24	0.26	0.28	0.31	0.35	0.37
Carbon Black Content	1% Active Carbon Black														
Standard Color	Black														
Polymer	100% Virgin Polypropylene														



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<b>7. WEATHERING</b>		
Resistance to Weathering (UV)	ASTM D 4355	>90% Retained Strength

## Notes:

- Mean values indicate the arithmetic mean derived from the samples taken for any one test as defined in the standard – usually an overall mean of five samples. Mean values are subject to tolerances based on 95% confidence limits as published on the product CE declaration of performance.
- Nominal Value (indicates an average manufacturing norm and not a controlled performance parameter)
- MD: Machine Direction (longitudinal to the roll)
- CMD: Cross Machine Direction (across the roll)
- Tensile testing is performed using extensometers

	Unit	VALUES												
		HPS2	HPS3	HPS4	HPS5	HPS6	HPS7	HPS8	HPS9	HPS11	HPS12	HPS14	HPS17	HPS19
<b>8. STANDARD DIMENSIONS</b>														
Roll Width	m	5.9	5.9	5.9	5.9	5.9	5.9	5.9	5.9	5.9	5.9	5.9	5.9	5.9
Length	m	200	175	150	150	150	150	125	125	100	75	75	75	75
Approximate Roll Weight	Kg	295	393	393	452	521	511	600	561	492	531	620	521	580

**9. NEEDLE DETECTION**

During manufacture, the geotextile passes close to three sets of magnets which remove metal particles up to 0.42 ounces and >0.08 inches. Just before the roll up, the geotextile passes through an electronic metal detection field. Audio and visual alarms indicate if metal particles are detected. Rolls are sent to stock if they pass through the field without an alarm event or, in the case of an alarm event, the operator inspects the suspect area, locates any metal particles and removes them. If unsuccessful, or if any doubt remains as to the presence of metal particles, then the roll goes to the re-inspection facility

**10. TESTING**

All materials are tested every 7176 yd<sup>2</sup> in an UKAS accredited ISO 17025 laboratory to all mechanical properties prior to release.

**11. STORAGE**

Geotextiles are supplied in packaging designed to protect the product from damage during handling and storage and degradation as a result of UV exposure. The product should be kept in appropriate packaging until such time that it is required for installation. The geotextile is clearly and indelibly marked with the product name along the edge of the roll at regular intervals no greater than 5.47yd. The packaging is labelled clearly to identify the product supplied in accordance with EN ISO 10320: Geotextile and Geotextile related products – Identification on site. Use slings where provided. Product weights are given on roll tickets. Use equipment appropriate to weight and dimension. Store and handle in accordance with good occupational hygiene and safety practice.