



### **[Product Description]**

Polyester filament spunbonded needle-punched geotextile, the geosynthetic material product manufactured by our company, is a new-type building material applied to geotechnical engineering and civil engineering. Such geotextile is made by use of the method of polyester filament netting and consolidating, with fiber array of three-dimensional structure. Besides excellent mechanical properties, such geotextile has excellent longitudinal and transverse drainage properties, extension properties, penetrating and filtering properties as well as high chemical properties such as acid- and alkali-proof and aging-resistant properties. Polyester filament spunbonded needle-punched geotextiles are mainly used in national important projects (including expressway, railway, water conservancy, airport, port, reclaiming land from the sea, garbage-burying place, municipal construction, electric construction and other projects) as well as waterproof materials and floor leather and other fields. Such geotextiles also have many functions such as protection, partition, filtration, reinforcement, anti-seepage and drainage functions, hence possessing high popularization.

Product width: 1-6m  
Unit weight: 150-800g/m<sup>2</sup>

### **[FUNCTIONS]**

#### **1. Inverted Filtration**

Inverted filtration refers to that to prevent soil particles from running off under the osmotic pressure while allow liquid to penetrate. Polyester Spunbonded Needle-punched Geotextile is available to replace the traditional grit inverted layer and possesses the advantages of reducing engineering work load, convenient for construction and speedy.

#### **Inverted Filtration of Abamurus & Drain**

Polyester Spunbonded Needle-punched Geotextile is available for the inverted layer of roadbed revetment, counterfort, abamurus backside and covered drain.

#### **Inverted Filtration of Dam & Revetment**

Polyester Spunbonded Needle-punched Geotextile is available for the inverted layer at the backsides of water-retaining structures such as surfaces at the upper and lower branches of core wall or miter wall of earth-rock dam, earth-rock cofferdam and revetment etc..

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## 2. Water-draining

Water-draining refers to that to enable water to drain out of earth mass or geotechnical structures through the permeable channel by use of material's penetrability. Polyester Spunbonded Needle-punched Geotextile is available to replace the traditional water-draining structures such as gravels and concrete pipe and is convenient for construction with bargain price and reliable quality.

### Roadbed & Road Surface Water-draining

Complex engineering measures of Polyester Spunbonded Needle-punched Geotextile in roadbed and road surface constructions of highroads and railways are available to drain off surface water and lower the groundwater table, so as to maintain the stability of roadbeds.

## 3. Segregation

Segregation refers to that to prevent adjacent mediums of different nature from mixing. The segregation of Polyester Spunbonded Needle-punched Geotextile between different mediums is available to maintain the integrity and stability of respective mediums and structures.

### Segregation of Beach Ring Levee, Seaport Wharf & Breakwater

In constructions of projects such as ring levee, wharf and breakwater, Polyester Spunbonded Needle-punched Geotextile is available for being laid onto the auger ground before enrockment for the improvement of foundation intensity.

### Segregation & Anti-seepage of Waste Landfill Site

The composite of Polyester Spunbonded Needle-punched Geotextile and Geomembrane is available for segregation and anti-seepage of waste landfill site to prevent noxious liquid from permeating soil and noxious gas from diffusing, so as to reduce environmental pollution and increase land use ratio.

## 4. Reinforcement

Reinforcement refers to that to add materials of certain tensile strength into earth mass for performance improvement. Polyester Spunbonded Needle-punched Geotextile used as reinforcement material will achieve better effects for improving the intensity and stability of earth mass and convenient for construction.

### Earth Slope Reinforcement

Polyester Spunbonded Needle-punched Geotextile in slope reinforcement of highroads and railways will improve the slope stability, enlarge the slope and reduce the land use.

### Roadbed Reinforcement

Polyester Spunbonded Needle-punched Geotextile used as reinforcement material in roadbed earthfilling will increase the sustainability and stability of roadbed.

## 5. Anti-seepage

Anti-seepage refers to that to prevent liquid from draining off in infiltration. The composite of Polyester Spunbonded Needle-punched Geotextile and Geomembrane as anti-seepage layer will be economical, durable and pollution-free.

### Dam Anti-seepage

The composite of Polyester Spunbonded Needle-punched Geotextile and Geomembrane is available as anti-seepage layer for dam miter wall or core wall, dam horizontal anti-seepage overspread and vertical anti-seepage wall on the pervious foundation, as well as concrete and rolled concrete dams.

### Channel Anti-seepage

The composite of Polyester Spunbonded Needle-punched Geotextile and Geomembrane is available for acequia and headrace as anti-seepage layer with convenience for construction.

### [Detailed Specifications]

Properties (Standard)	Unit	FNG 125-5.85	FNG 140-5.85	FNG 150-5.85	FNG 200-5.85	FNG 250-6	FNG 300-6	FNG 330-6	Remark
<b>Mechanical Properties</b>									
Tensile Strength [GB/T 17639-1998]	KN/m	7.74	8.45	8.65	12.75	17.75	18.75	20.85	MD/CD Average
Elongation at maximum load [GB/T 17639-1998]	%	68.15	60.7	67.3	65.5	66.85	66.3	65.5	Standard value 40-80
Trapezoidal Tear [GB/T 17639-1998]	MD/CD								
Grab Tensile Strength [GB/T 17639-1998]	KN(>=)	0.197	0.205	0.24	0.305	0.41	0.44	0.525	MD/CD Average
Grab Elongation [GB/T 17639-1998]	%	0.415	0.465	0.498	0.815	0.955	1.155	1.305	
Puncture resistance [GB/T 17639-1998]	KN(>=)	58.3	55.3	60.7	59.9	62.4	62.8	61.9	Average value
Broken Force [GB/T 17639-1998]	KN(>=)	0.22	0.24	0.26	0.26	0.38	0.44	0.48	
CBR Mullen burst [GB/T 17639-1998]	KN(>=)	1.5	1.68	1.8	2.1	2.63	3.0	3.3	
Cone drop test(hole-Ø) [GB/T 17639-1998]	mm	1.39	1.5	1.7	2.3	2.8	3.4	3.5	
<b>Hydraulic Properties</b>									
Upbrightness permeability [GB/T 17639-1998]	(cm/s)	$2.5 \times 10^{-1}$	$1.9 \times 10^{-1}$	$2.1 \times 10^{-1}$	$1.7 \times 10^{-1}$	$2.2 \times 10^{-1}$	$1.4 \times 10^{-1}$	$2.4 \times 10^{-1}$	Standard value $K \times (10^{-1} - 10^1)$ K=1.0-9.9
Filtration opening [GB/T 17639-1998]	size $O_{60}$ mm	0.093	0.086	0.085	0.083	0.081	0.081	0.082	Standard value 0.07-0.2
<b>Physical Identification Properties</b>									
Thickness [GB/T 17639-1998]	2KP mm	1.49	1.61	1.75	2.3	2.9	3.0	3.3	Average value
Mass per unit area [GB/T 17639-1998]	g/m <sup>2</sup>	125	140	150	200	250	300	330	
Width	m(>=)	5.85	5.85	5.85	5.85	6	6	6	

Properties (Standard)	Unit	FNG 350-6	FNG 400-6	FNG 450-6	FNG 500-6	FNG 600-6	FNG 700-6	FNG 800-6	Remark
<b>Mechanical Properties</b>									
Tensile Strength [GB/T17639-1998]	KN/m	21.55	23.2	25.5	28.25	36.1	45.2	49.8	MD/CD Average
Elongation at maximum load [GB/T17639-1998]	%	65.25	62.3	62.1	61.85	61.25	61.78	62.34	Standard value 40-80
Trapezoidal Tear [GB/T17639-1998]	KN(>=)	0.54	0.595	0.66	0.735	0.84	1.11	1.30	MD/CD Average
Grab Tensile Strength [GB/T17639-1998]	KN(>=)	1.384	1.655	1.862	2.069	2.48	2.896	3.31	
Grab Elongation [GB/T17639-1998]	%	60.9	63.4	64.4	60.2	61.6	62.8	61.7	Average value
Puncture resistance [GB/T17639-1998]	KN(>=)	0.48	0.55	0.62	0.69	0.83	0.96	1.1	
Broken Force [GB/T17639-1998]	KN(>=)	3.59	4.1	4.61	5.0	6.12	7.14	8.16	
CBR Mullen burst [GB/T17639-1998]	KN(>=)	3.8	4.2	4.6	5.1	5.9	6.5	7.2	
Cone drop test(hole-Ø) [GB/T17639-1998]	mm	17.1	14.1	13.3	12.0	9.4	6.5	2.0	
<b>Hydraulic Properties</b>									
Uprightness permeability [GB/T17639-1998]	(cm/s)	2.0*10 <sup>-1</sup>	2.7*10 <sup>-1</sup>	2.7*10 <sup>-1</sup>	2.75*10 <sup>-1</sup>	2.8*10 <sup>-1</sup>	2.81*10 <sup>-1</sup>	2.83*10 <sup>-1</sup>	Standard value Kx (10 <sup>-1</sup> -10 <sup>-1</sup> ) K=1.0-9.9
Filtration opening [GB/T17639-1998]	sizeD <sub>10</sub> mm	0.082	0.083	0.082	0.08	0.09	0.091	0.093	Standard value 0.07-0.2
<b>Physical Identification Properties</b>									
Thickness [GB/T17639-1998]	2KP mm	3.67	4.1	4.3	4.6	5.2	5.6	5.9	Average value
Mass per unit area [GB/T17639-1998]	g/m <sup>2</sup>	350	400	450	500	600	700	800	
Width	m	6	6	6	6	6	6	6	



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