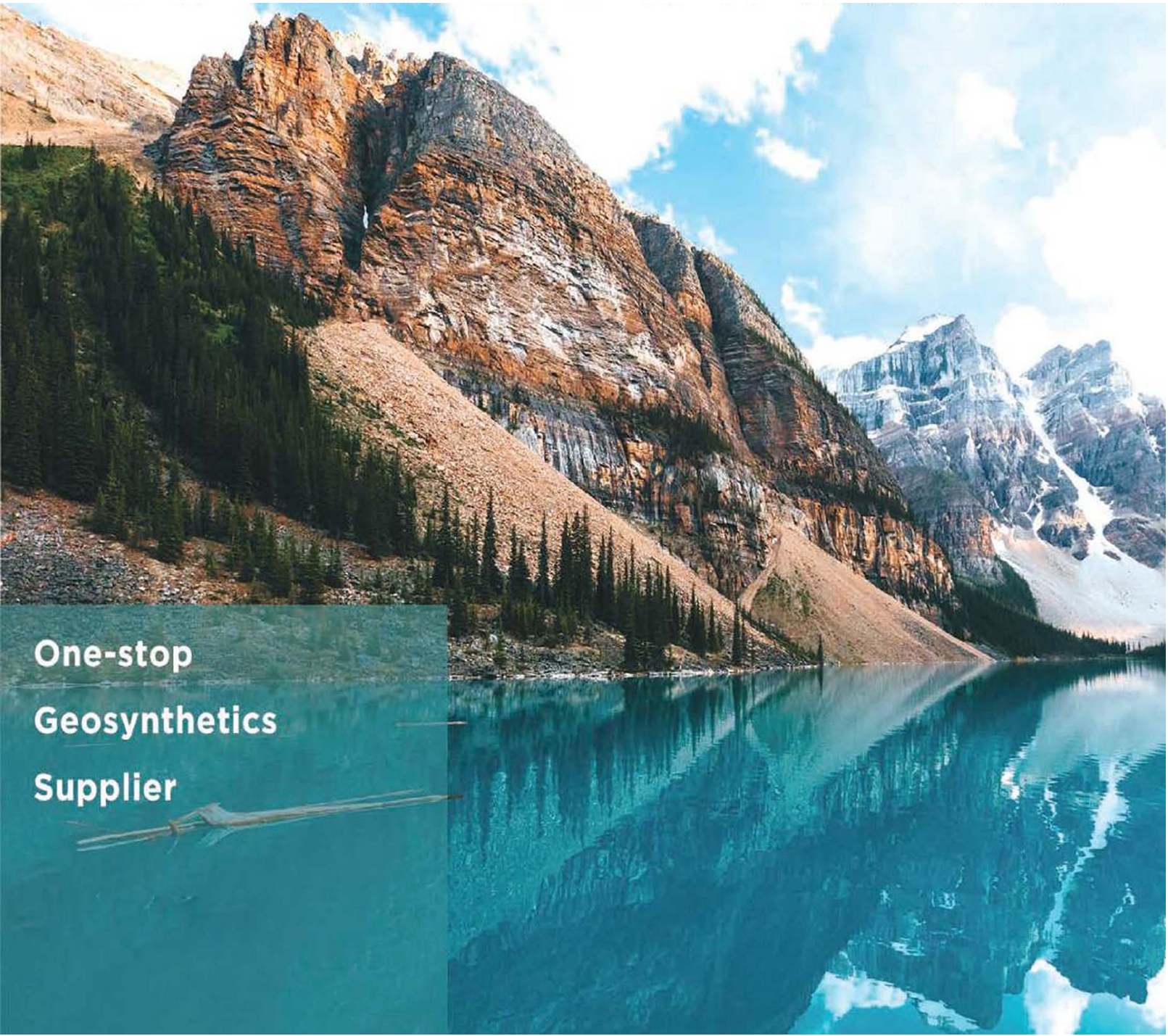
Asia Pacific Geotextile Material Co., Ltd.



Asia Pacific Geotextile Material Co., Ltd. is a high-tech enterprise which integrates development, design, production, consultation, construction, domestic and international trade of new earthwork synthetic material. The company was established since 2000 and is located in No. 10 Yuanshan Road, High-Tech Development Zone, Laiwu district, Jinan City, Shandong Province, China.

The company has specialized in producing geotechnical material including geomembrane, geocomposite geomembrane, root barrier, geotextile, filament geotextile, weed control membrane, geogrid, geocell, GCL, drainage board, drainage cage, grass planting grid, welding machine,etc more than 15 years. The products are widely used in the field such as the landfill, pond, mine, garden landscape, water conservancy, highway, railway, oil field, biogas, industry and aquaculture etc.

GEOMEMBRANE
SMOOTH

The geomembrane is manufactured by the high-quality polyethylene virgin raw materials, with carbon black, anti-oxidant, anti-aging and uv-resistance component.

SPECIFICATION

Thickness: 0.1mm-3.0mm
Width: 1m-8m
Length: 50m-100m
Color: Black, White, Green, Blue etc
Material: HDPE/LDPE/LLDPE
Certification: ISO, TRI, SGS, BV

APPLICATIONS

TEXTURED

Textured HDPE Geomembrane is developed and fabricated with either single-sided or double-sided textured surface to improve the friction between two layers. Textured HDPE Geomembrane has a rough surface which can highly improve the friction coefficient and fit more suitably for steep slope and vertical engineering design work, so as to which maximize the effective volume of geomembrane, and they are also processed with smooth edges to allow high quality thermal fusion welding between adjacent sheets.

100% Virgin Geomembrane Technical Data Sheet

Item	Index					
Thickness（mm）	0.75	1.00	1.25	1.50	2.00	2.50
Density(g/cm³)	⩾0.940					
Tensile yield strength (N/mm)	⩾11	⩾15	⩾18	⩾22	⩾29	⩾37
Tensile fracture strength(N/mm)	⩾20	⩾27	⩾33	⩾40	⩾53	⩾67
Yield elongation(%)	⩾12					
Fracture elongation(%)	⩾700					
Right-anger tearing load(N)	⩾93	⩾125	⩾160	⩾190	⩾250	⩾315
Puncture resistance(N)	⩾240	⩾320	⩾400	⩾480	⩾640	⩾800
Stress cracking of tensile load(h)	500					
Carbon black content(%)	2.0-3.0					
Carbon black dispersion	Of the ten data, 3 levels are not more than 1, 4 levels, and 5 levels are not allowed.					
Low temperature impact catalytic performance	Atmospheric oxidation induction time ⩾100 Induction time of high pressure oxidation ⩾400					
Thermal ageing at 85 ° C (OIT retention at atmospheric pressure after 90°C) %	⩾55					
UV resistant (OIT retention after 1600h UV exposure)%	⩾50					

GEOTEXTILE

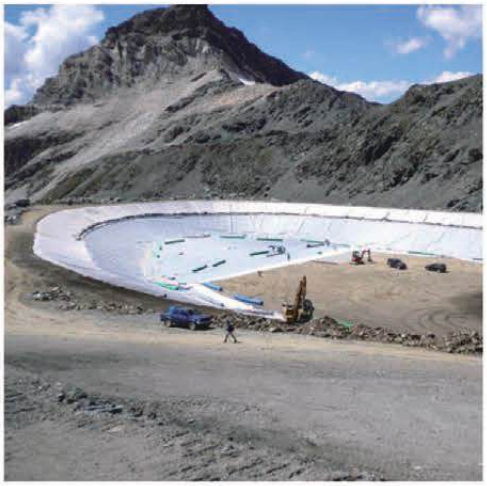
Made from PET(polyester) or PP(polypropylene) by non woven needle punched manufacturing, with the functions of filtration, drainage, reinforcement, protection and maintenance etc.

SPECIFICATION

- Material: PP/PET
- Gram Weight: 100-800gsm
- Roll Width: 1m to 6m
- Roll Length: 50m-200m
- Color: White, Black, Green etc.

APPLICATIONS

Water conservancy project and hydropower project, road paving, railway, airport and river and port, river bank protection and tunnel, environmental protection etc.

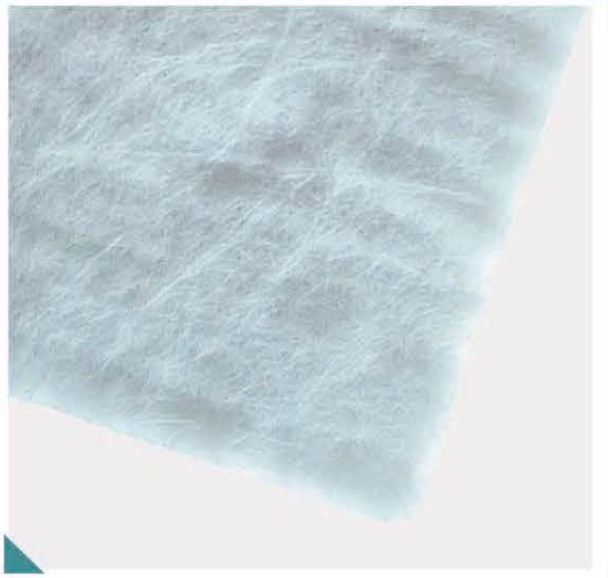


PP(polypropylene) Geotextile Technical Data Sheet

Item		Unit	Index							
			150g	200g	250g	300g	400g	500g	600g	800g
Grab Tensile Strength	MD	N	⩾520	⩾800	⩾900	⩾1100	⩾1500	⩾2000	⩾2400	⩾3200
	CD		⩾520	⩾800	⩾900	⩾1100	⩾1500	⩾2000	⩾2400	⩾3200
Grab Elonation	MD	%	50-90				50-100			
	CD									
Trapezoidal Tear Strength	MD	N	⩾200	⩾350	⩾380	⩾420	⩾500	⩾580	⩾660	⩾660
	CD		⩾200	⩾350	⩾380	⩾420	⩾500	⩾580	⩾660	⩾840
CBR Mullen Burst Strength		KN	1.8	2.0	2.5	3.5	4.3	5.5	6.5	8.5
Tensile Strength	MD	KN	⩾5.5	⩾11	⩾12	⩾16	⩾22	⩾28	⩾35	⩾50
	CD		⩾5.5	⩾11	⩾12	⩾16	⩾22	⩾28	⩾35	⩾50
Breaking Elongation	MD	%	50~100				50~90			
	CD		50~100				50~90			
Dry Sieve Size O90		mm	⩽0.1							

FILAMENT GEOTEXTILE

Filament geotextile is a new type of construction material used in civil engineering, of which filament fibres are laid out in a mesh through different equipment and processes, then needled and other processes are added to allow different fibres to interweave together and entwine with each other to make perfect fabric specifications, so that the fabric can be soft, full, thick and stiff to achieve different thicknesses and meet the use requirements.



FEATURES

- High strength.
- Very high UV resistance.
- Resistance to high temperatures.
- Good planar drainage and vertical permeability.
- Creep resistance.
- Resistance to erosion as well as corrosion.
- Good ductility.

SPECIFICATION

Gram Weight: 100~1000gsm
Roll Width: 1m to 6m
Roll Length: 50m~200m
Color: White

APPLICATIONS

Isolation, back filtration and drainage of foundations for roads, railways and airport runways, reinforcement and drainage of earth slopes, retaining walls and road surfaces.
Soft foundation treatment of port projects, reinforcement and drainage of beach bunds and harbour terminals.

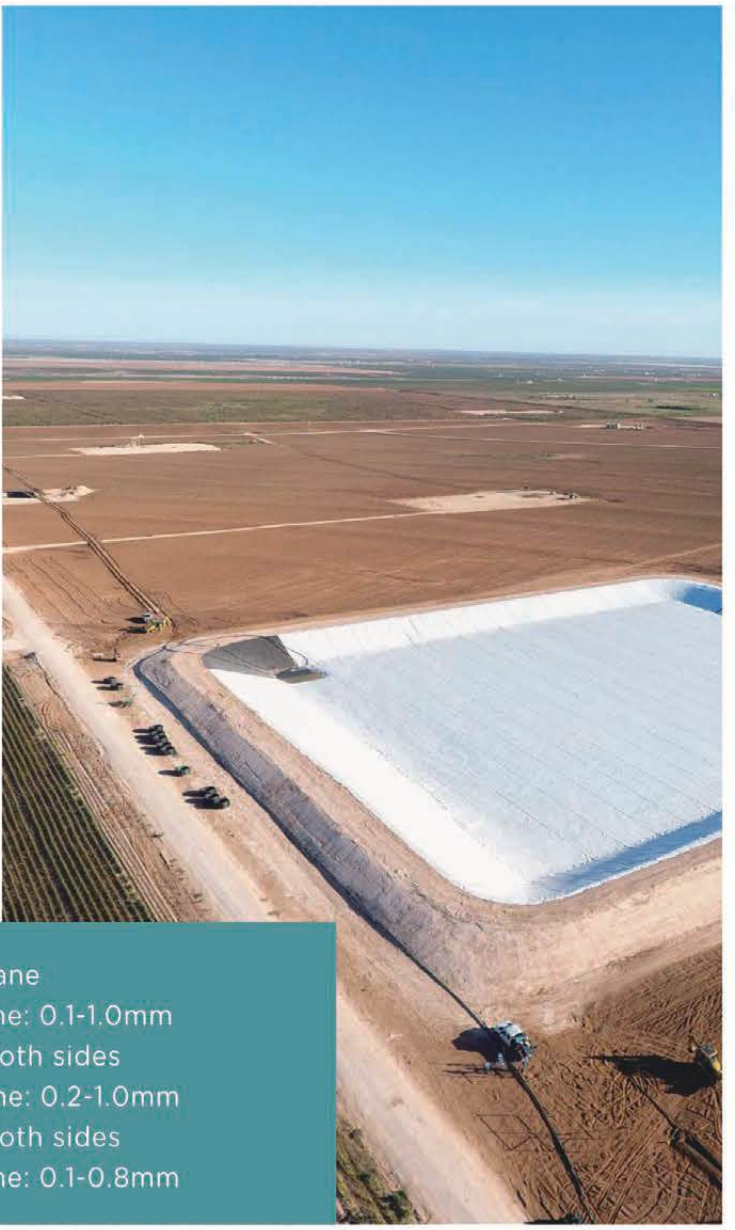
PET(polyester) FILAMENT GEOTEXTILE Technical Data Sheet

Item	Value								
	150g	200g	250g	300g	400g	450g	500g	600g	800g
Unit Weight Variation (%)	-6	-6	-5	-5	-5	-5	-4	-4	-4
Thickness (mm)	1.2	1.6	1.9	2.2	2.8	3.1	3.4	4.2	5.5
Width Deviation (%)	-0.5								
Breaking Strength (kN/m)	7.5	10.5	12.5	15.0	20.5	22.5	25.0	30.0	40.0
Breaking Elongation (%)	40~80								
CBR Burst strength (kN)	1.4	1.8	2.2	2.6	3.5	4.0	4.7	5.5	7.0
Sieve Size (mm)	0.07~0.2								
Vertical Permeability Coefficient (cm/s)	$(1.0\sim9.9) \times (10^{-1}\sim10^{-3})$								
Tear Strength (kN)	0.21	0.28	0.36	0.42	0.56	0.63	0.70	0.82	1.10

GEOCOMPOSITE GEOMEMBRANE

PROCESSES AND TYPES

Composite geomembrane is in the film on one or both sides of the oven through the far infrared heating, the geotextile and geomembrane through the guide roller together to form a composite geomembrane, with forms of one cloth a film, two cloth a film, two film a cloth and so on.



ENGINEERING APPLICATIONS

Composite geomembrane is mainly used for seepage. It has many physical and mechanical properties of high indicators such as high tensile strength tear strength and breaking strength, to meet the water conservancy, municipal engineering, construction, transportation, subway, tunnel and other civil engineering needs. Because of its choice of polymer materials and the production process of adding anti-aging agent, it can be used in non-conventional temperature environment.

- One geotextile and one geomembrane

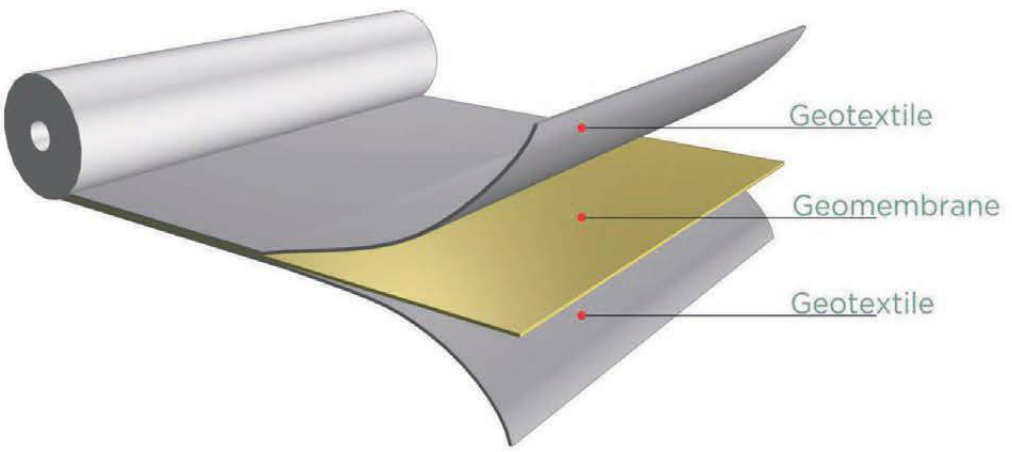
Geotextile: 100-800gsm, geomembrane: 0.1-1.0mm

- Geomembrane with geotextile on both sides

Geotextile: 100-400gsm, geomembrane: 0.2-1.0mm

- Geotextile with geomembrane on both sides

Geotextile: 100-800gsm, geomembrane: 0.1-0.8mm



Geocomposite geomembraen Technical Data Sheet

Item	500g	600g	700g	800g	900g	1000g
Tensile Break Strength MD&CD (KN/m) ⩾	7.5	10	12	14	16	18
Sandard Break Elongation MD&CD (%)	30~100					
CBR Breaking Strength (KN) ⩾	1.5	1.9	2.2	2.5	2.8	3
Tearing Strength MD&CD (KN) ⩾	0.25	0.32	0.4	0.48	0.56	0.62
Peel Strength (N/cm) ⩾	6					
Vertical Permeability Coefficient (cm/s)	According to Design or Contract Requirements					
Width Deviation (%)	-1					

The Specified Value of Hydrostatic Pressure Resistance (Mpa) ⩾

Geomembrane With One Side Geotextile	0.5	0.6	0.8	1	1.2	1.4
Geomembrane With Two Sides Geotextile	0.6	0.8	1	1.2	1.4	1.6

GEOCELL

Plastic HDPE geocell is three dimensional, honeycomb like structures manufactured from high density polyethylene and jointly welded by ultrasonic technique, which is flexible to be folded during the transport and installation on construction sites. The geocell nets will be filled with soils, granular, cements or other on-site infill materials when stretched into web structures, which has powerful and rigid confinement in the lateral and vertical sides.

SPECIFICATION

- Height: 50~250MM
- Welding distance: 300MM~1200MM
- Textured or smooth
- Peel strength of welding point: 1000N/10CM(GB), 1420N/10CM(ASTM), 1200N/10CM
- Perforated or not

GEOCELL Technical Data Sheet

Index Properties	Test Method	Units	Values
Polymer	-	-	HDPE
Carbon Black content	ASTM D 1603	%	⩾1.5
Density	ASTM D 1505	g/cm^3	⩾0.935
Sheet Thickness before texturing	ASTM D 5199	mm	1.0±0.1~1.2±0.1
Sheet Thickness aftertexturing	ASTM D 5199	mm	1.5±0.1~1.7±0.1
Seam Peel Strength	-	N/cm	100/120/142
Tensile strength at Yield	ASTM D 638	N/cm	>200
Welding Distance	-	mm	300~1200
Cell Depth	-	mm	50~300
Dimensions			
Expanded Cell Size (width×length)	-	mm	212×193~849×772
Expanded Section width(min./max.)	-	m	1/6
Expanded Section length(min)	-	m	0.9/26.3

GCL
Geosynthetic Clay Liner

Geosynthetic clay liner is composed of high dilatability of sodium base bentonite filling between the special composite geotextile and nonwoven fabric, through the method of acupuncture or suture composite impervious material.

The mineralogical name of bentonite is montmorillonite. Bentonite has the property of water swelling, and sodium-based bentonite adsorbs five times its own weight of water when it meets water, and its volume expands to more than 15-17 times of the original, locking the sodium-based bentonite in the middle of two layers of geosynthetic materials. It plays the role of protection and reinforcement, so that GCL could have a certain overall shear strength.

SCOPE AND CONDITIONS OF APPLICATIONS

GCL is a geosynthetic material specifically designed to prevent leakage in artificial lakes and water features, landfills, underground garages, roof gardens, ponds, oil depots and chemical dumps.

In the traditional waterproofing materials can not work, under the negative temperature (-4 ℉) can still work; in the wet grass-roots level (no open water) can also work; in the rain and snow weather can not work; not suitable for strong acid, strong alkaline solution impermeable.

Geosynthetic Clay Liner Technical Data Sheet

Item		GCL-NP	GCL-OF	GCL-AH
Mass per Unit (g/m^2)		⩾4000	⩾4000	⩾4000
Swelling index of Bentonite (ml/2g)		⩾24	⩾24	⩾24
Adsorbed Methylene Blue (g/100g)		⩾30	⩾30	⩾30
Tensile Strength (N/100mm)		⩾600	⩾700	⩾600
Max. Elongation Under Load (%)		⩾10	⩾10	⩾8
Peel Strength (N/100mm)	Non-woven Cloth and Woven Cloth	⩾40	⩾40	-
	PE Film and Non-woven Fabric	-	⩾30	-
Permeability Coefficient (m/s)		$\leqslant 5.0\times10^{-11}$	$\leqslant 5.0\times10^{-12}$	$\leqslant 5.0\times10^{-12}$
Resistance to Hydrostatic Pressure		0.4MPa, 1h No Leakage	0.6MPa, 1h No Leakage	0.6MPa, 1h No Leakage
Filtration Loss (ml)		⩽18	⩽18	⩽18
Durability of Bentonite (mL/2g)		⩾20	⩾20	⩾20

GEOGRID

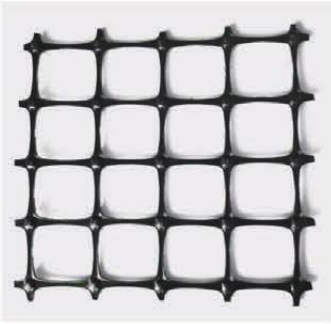
UNIAXIAL PLASTIC GEOGRID

Uniaxial plastic geogrid is a high strength geotechnical material with polymer as the main raw material, of which certain anti-UV and anti-ageing additives are added. Through one-way stretching to make the original distribution of scattered chain molecules, are re-oriented in a linear state, extruded and pressed into thin plates and then punching regular hole mesh and longitudinal stretching are used.

- Reinforcement of weak foundations
- Cement pavement
- Reinforcement of road embankment dams and retaining walls
- Reinforcement of river and sea dike
- Disposal of waste landfill
- Suitable for less frozen soil, rich frozen soil, high ice content frozen soil and other poor geology

Item	TDDG 50	TDDG 65	TDDG 90	TDDG 100	TDDG 130	TDDG 150	TDDG 170
Width (m)				1-2.5			
Tensile strength ⩾(kN/m)	50	65	90	100	130	150	170
Elongation ⩽(%)				11.5			
Tensile strength at 2% strain ⩾(kN/m)	12	16	24	26	38	41	52.5
Tensile strength at 5% strain ⩾(kN/m)	23	31	45	50	75.5	81	103

BIAXIAL PLASTIC GEOGRID



Biaxial plastic geogrid is made from polymer through a process of extrusion, plate formation and perforation followed by longitudinal and transverse stretching. The material has a high tensile strength in both the longitudinal and transverse directions and this structure also provides a more effective force bearing and diffusion ideal for interlocking systems in the soil and is adapted to the reinforcement of large areas of permanently loaded foundations.

USED FOR...

- Increase the bearing capacity of the road (foundation) and extend the service life of the road (foundation)
- Preventing the road surface from caving in or cracking, keeping the ground beautiful and tidy
- Strengthen the soil slope and prevent soil erosion
- Reduce the thickness of the matting layer and save cost
- Support the stability of the slope grass mat to green the environment.

Item	TGSG 15-15	TGSG 20-20	TGSG 25-25	TGSG 30-30	TGSG 35-35	TGSG 40-40	TGSG 50-50
Longitudinal Tensile Strength ⩾(kN/m)	15	20	25	30	35	40	50
Transverse Tensile Strength ⩾(kN/m)	15	20	25	30	35	40	50
Longitudinal Elongation ⩽(%)	13						
Transverse Elongation ⩽(%)	13						
Longitudinal Tensile Strength at 2% Strain ⩾(kN/m)	5	7	9	10.5	12	14	17.5
Transverse Tensile Strength at 2% Strain ⩾(kN/m)	5	7	9	10.5	12	14	17.5
Longitudinal Tensile Strength at 5% Strain ⩾(kN/m)	7	14	17	21	24	28	35
Transverse Tensile Strength at 5% Strain ⩾(kN/m)	7	14	17	21	24	28	35
Width (m)	1-6						

FIBERGLASS GEOGRID

The fiberglass geogrid is made from high quality reinforced alkali-free glass fiber yarn, woven into the base material using advanced foreign warp knitting machines, and a warp knitting directional structure, making full use of the yarn strength in the fabric and improve its mechanical properties by, to make it have good tensile strength, tear strength and creep resistance, and is coated with high quality modified bitumen to make a flat network material. It solves the problem of strengthening asphalt pavement.

APPLICATIONS

- Old asphalt concrete pavement, reinforced and strengthened asphalt surface layer to prevent and control diseases.
- Cement concrete pavement reconstruction of composite pavement, inhibit reflection cracks caused by slab shrinkage, etc.
- Road widening works, prevention of cracks caused by old and new joints and uneven settlement.
- Reinforced soft soil base treatment, facilitate soft soil precipitation consolidation, effectively inhibit settlement, uniform stress distribution, enhance the overall strength of the road base.
- New roads with semi-steel subgrade produce shrinkage cracks, reinforcement to prevent the reflection of cracks in the foundation and caused by road cracks.

Item		EGA 40-40	EGA 50-50	EGA 60-60	EGA 80-80	EGA 100-100	EGA 120-120	EGA 150-150
Mesh size (mm)			25.4X25.4	12.5X12.5		40.0X40.0	50.8X50.8	
Breaking strength ⩾(kN/m)	MD	40	50	60	80	100	120	150
	CD	40	50	60	80	100	120	150
Elongation at break (%)	MD	4						
	CD	4						
Thernal tolerance (°C)		-100~280						
Width (m)		1~6						

POLYESTER GEOGRID

Polyester geogrid is made from polyester fibres. of which the warp-knitted directional structure is used. The warp and weft yarns in the fabric are not bent to each other, and the intersections are bound together with high strength fibre filaments to form a solid bond, which gives play to its mechanical properties.

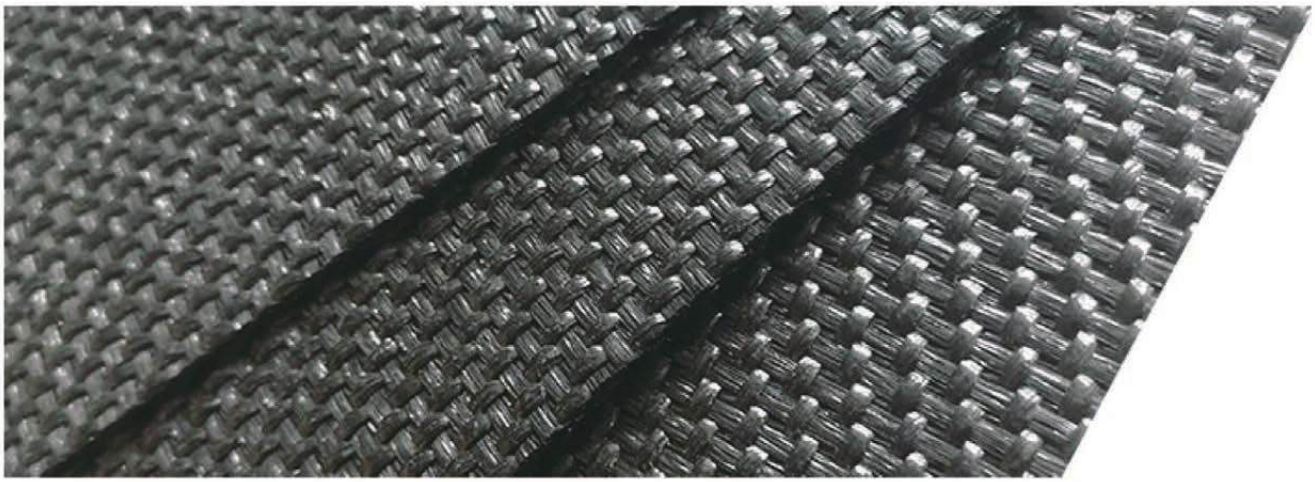
The warp-knitted polyester geogrid is characterized by high tensile strength, low elongation, high tear strength and small differences in longitudinal and transverse strength. It is also resistant to UV ageing, abrasion and corrosion.

APPLICATIONS

- Soft road base enhancement for various high grade roads.
- Reinforcement, isolation and strengthening of embankments and river channels in hydraulic engineering to enhance their protective capacity and improve the bearing capacity and stability of foundations.
- Used for reinforcement of road embankment slopes and reinforcement of retaining walls to enhance the overall strength.

Item		JBGS 30-30	JBGS 60-30	JBGS 60-60	JBGS 80-30	JBGS 120-120	JBGS 200-200	JBGS 600-600
Tensile strength ⩾(kN/m)	MD	30	60	60	80	120	200	600
	CD	30	30	60	30	120	200	600
Elongation ⩽(%)		13						
Grid size(mm)				25.4X25.4	50.8X50.8	76.2X76.2		
Width(m)		1~6						

HIGH-STRENGTH WOVEN GEOTEXTILE



High-strength woven geotextiles are woven with a combination of different types of high-performance polypropylene fiber yarns in the warp and weft directions.
This series of products make full use of the characteristics of synthetic fibers to meet the needs of various types of geotechnical engineering functions such as anti-filtration, isolation, reinforcement and protection. Widely used in railway, highway and pile network bearing roadbed reinforcement, is a kind of technical value and application value is relatively high. We can produce unidirectional or bidirectional woven geotextiles with different specifications and strength range of 40-1600KN/m according to the design requirements.

FEATURE

- High strength and durability
- Low elongation and stable structure
- Resistant to corrosion and chemicals
- Good water permeability
- Convenient to transport and easy to construct

APPLICATIONS

- Road reinforcement
- Pile network bearing structure reinforcement
- Soft foundation treatment
- Landfill
- River slope protection and reinforced soil slope retaining wall

COMPOSITE DRAINAGE MESH

Composite drainage mesh (also known as 3D geotechnical drainage sheet, tunnel drainage waterproof sheet, drainage waterproof sheet) consists of a three-dimensional structure of plastic mesh bonded on both sides with a permeable geotextile, which can replace the traditional sand and gravel layer and is mainly used for the drainage of landfills, road foundations and the inner walls of tunnels.

FEATURES

1. High drainage (equivalent to one metre thick gravel drainage).
2. High tensile strength.
3. Reduces the chance of geotextiles becoming embedded in the mesh core and maintains stable drainage over time.
4. Long-term resistance to high pressure loads (withstands compression loads of approximately 3000 Ka).
5. Corrosion resistance, acid and alkali resistance, long service life.
6. Easy to construct, shorten the construction period and reduce costs.

APPLICATIONS

Mainly used in railway, highway, tunnel, municipal engineering, reservoir, slope protection and other drainage projects with remarkable effect.