GEOSYNTHETIC PRODUCTS

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About Us

Founded in 1995, OYH has nearly three decades of expertise in building materials industry, providing comprehensive solutions for major infrastructure projects, industrial buildings, and residential and commercial constructions worldwide. With a core focus on Waterproofing and Mortar Technologies, the group has expanded across both up stream and downstream sectors, establishing an integrated building materials service system that includes multiple business segments such as building waterproofing, non-wovenfabrics, architectural coatings, building renovation, energy-efficient insulation, specialty membranes, mortar and powder-based products， and chemical raw materials.

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In the manual,all values are based on test results determined under laboratory conditions.
For requirements of other models, you can communicate with our technical personnel about the feasibility for customized production.
Note: MD=Machine Direction/CMD= Cross Machine Direction
**The values given here are maximum values.*

Polypropylene Filament Geotextiles

DESCRIPTION

TDF HS Series geotextiles are needle-punched continuous filament geotextiles and made of 100% virgin polypropylene with UV resistance.The production process uses advanced spinning equipment, the single-filament fineness can reach more than 14dtex,and the paving net is even without cloud spots. Product performance is more uniform and stable through proprietary finishing equipment.

PERFORMANCE FEATURE

- High Strength Coarse Denier：TDF adopts advanced spinning technology the fiber fineness of geotextiles can reach up to 14D which is 3 times of the spinning fineness of traditional technology. It has excellent mechanical properties,hydraulical properties. It is an excellent geosynthetic material.
- High Mechanical Properties：polypropylene spunbonded needle-punched geotextiles are made of continuous polypropylene filaments, the tensile fracture of the geotextiles mainly is the fracture of fibers, while mainly is drawn out between fibers for the staple fiber geotextiles.Therefore, the strength, elongation and other mechanical properties of polypropylene spunbonded needle-punched geotextiles are better than staple fiber geotextiles.
- High Resistance In Applications：Polypropylene has excellent acid and alkali resistance(pH2~pH13), and is applied for areas touched with alkaline interfaces such as cement, lime, and saline-alkali land.High abrasion resistance and UV resistance of polypropylene, which ensures durability and operational reliability.
- Easy To Line:Polypropylene spunbonded needle-punched geotextile has low needle-punched density,the fabric surface is soft and not stiff, more convenient to lay and install, and fits the working surface better.

SPECIFICATION

Weight: 100-1200g/m²
Thickness: 0.8mm-5.0mm
Color: White/Gray
Material: PP

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APPLICATION SCOPE

- Geotechnical engineering, especially the environment with acid and alkali. Such as:highways, railways (high-speed rail), airports, seaports, landfills, tailings dams, fly ash landfills, ash dam ponds, man-made wetlands, rivers and lakes management, reservoirs,canals, reclamation land, sewage goverance and other projects.
- In the field of transportation, such as strengthening, protecting, isolating, filtering, and draining parts of road and railway subgrades, high-speed rail tracks, dynamic layers,isolation layers, airport apron and runway reinforced layers, seaport reinforced slope protection layers.

PROPERTIES

Properties	Unit	HS 100	HS 200	HS 300	HS 400	HS 500	HS 600	HS 800	HS 1000
Mass Per Unit Area [ISO 9864]	g/m²	100	200	300	400	500	600	800	1000
Thickness 2 pKa [ISO 9863-1]	mm	0.8	1.6	2.3	3.0	3.3	3.9	4.5	5.0
Tensile Strength [ISO 10319]	kN/m	6.5	14	23	28	35	42	56	65
Elongation at Tensile Strength [ISO 10319]	%	40~110							
Grab Tensile Strength [ASTM D 4632]	kN	0.4	1.0	1.5	2.1	2.5	3.0	4.0	5.0
Grab Elongation [ASTM D 4632]	%	50~120							
CBR Burst strength [ISO 12236]	kN	1.2	2.2	3.5	4.5	5.5	6.5	8.7	10
Trapezoidal Tear Strength [ISO 9073-4]	kN	0.24	0.5	0.7	0.9	1.1	1.2	1.4	1.6
Flow Rate (50mm Head) [ISO 11058]	L/m²/s	70	60	50	35	25	15	10	10
In-plane Water Flow 20 kPa [ISO 12958]	L/m².h	$2*10^{-4}$	$8*10^{-4}$	$1*10^{-3}$	$1*10^{-3}$	$1*10^{-3}$	$1*10^{-3}$	$1*10^{-3}$	$1*10^{-3}$
Permittivity [ISO 11058]	s^{-1}	1.6	1.4	1.2	0.9	0.6	0.35	0.1	0.05
Apparent Opening Size O_{90}* [ISO 12956]	mm	0.05~0.3							
UV Resistance After 500 hrs [ASTM D 4533]	%	70							
Chemical Resistance	%	No effect in the range of pH2-13							

Polyester Filament Geotextiles

DESCRIPTION

YH Polyester filament needled geotextiles are made of 100% virgin polyester with excellent aging resistance,excellent mechanical properties, excellent anti-aging, corrosion resistance and excellent water permeability; It can adapt to the uneven surface, the construction method is safer, simpler and more efficient,and it can solve the construction more economically and more durable.

PERFORMANCE FEATURE

- High strength:Polyester filament geotextiles can ensure the three-dimensional porosity of geotextiles,which is conducive to the realization of excellent hydraulical properties.The puncture strength of geotextiles have great advantages, especially suitable for reinforcement of retaining walls and embankment.
- Creep Resistance:Many engineering problems involve creep polyester filament geotextiles have better creep resistance than other geotextiles, so they have better long-term durability.
- Excellent UV Resistance Compared with other polymer geotextiles.polyester continuous filament geotextiles have more excellent UV resistance and are more suitable for short-term exposed construction environments and applications
- Easy To Line:Polyester spunbonded needle-punched geotextile has low needle-punched density the fabric surface is soft and not stiff, more convenient to lay and install, and fits the working surface better.

SPECIFICATION

Weight: 150-800g/m^2

Thickness: 1.2mm-5.0mm

Color: White/Black

Material: PET

APPLICATION SCOPE

- Inverting fitration of dams and slope protection of water conservancy projects,isolation and seepage prevention of channels.
- Road, railway, airport runway foundation isolation, filtration, drainage, soil slope,retaining wall and pavement reinforcement and drainage.
- Soft foundation treatment for port engineering, reinforcement and drainage of beachdikes, harbour terminals and breakwaters.

PROPERTIES

Properties	Unit	G150	G200	G300	G400	G500	G600	G800
Mass Per Unit Area [ISO 9864]	g/m^2	150	200	300	400	500	600	800
Thickness 2 pKa [ISO 9863-1]	mm	1.2	1.6	2.2	2.8	3.4	4.2	5.5
Tensile Strength [ISO 10319]	kN/m	9	12	18	24	30	36	48
Rate of Deviation in Mass Per Unit Area	%	-5						
Width Deviation Rate	%	-0.5						
Thickness Deviation Rate	%	-10						
Elongation at Tensile Strength [ISO 10319]	%	40~80						
Grab Tensile Strength [ASTM D 4632]	kN	0.5	0.7	1.1	1.4	1.9	2.4	3.0
Grab Elongation [ASTM D 4632]	%	40~80						
CBR Burst Strength [ISO 12236]	kN	1.6	1.9	2.9	3.9	5.3	6.4	7.9
Trapezoidal Tear Strength [ISO 9073-4]	kN	0.22	0.29	0.43	0.57	0.71	0.83	1.1
Apparent Opening Size O_{90} [ISO 12956]	mm	0.05~0.3						
UV Resistance After 500 hrs [ASTM D 4355]	%	85						

Staple Fiber Geotextile

DESCRIPTION

YH Staple fiber needle punched geotextile is produced from polyester or polypropylene Fiber.Geotextile fibers are opened, mixed,carded (or air-flowed) to form a net, laid, drawn, and acupunctured to form a finished product. The entanglement strength of acupuncture is sufficient to meet the tensile stress during laying without causing tearing and bursting.

APPLICATION SCOPE

- Reinforcement in retaining wall backfill.
- Strengthen the weak road and fix the cracks on the road.
- Improve the stability of slope and reinforcement soil, avoid water and soil loss and soil frozen injure.
- Isolation layer of artificial backfill soil stone with foundation and different tundra.
- Filtration layer of drainage pipe or gravel sub-drain.
- Vertical or horizontal drainage; Bury in soil to release air pressure.
- Reinforce the weak foundation of engineering of road, railway, embankment, airport.

SPECIFICATION

Weight: 100-800g/m²
Thickness: 1.0mm-5.0mm
Color: White/Black
Other colors can be customized
Material: PET/PP

PERFORMANCE FEATURE

- High strength,and high elongation,enabling the geotextile to adapt to the uneven base surface.
- Excellent physical and mechanical properties such as breaking strenath and puncture resistance.
- It has good acid and alkali resistance and good hot-melt adhesion, aood processability on site, and issuitable for various projects.
- Corrosion resistance: long-term corrosion resistance in soil and water with different pH.
- Good water permeability: there are gaps between flat wires, so it has good water permeability.
- Good anti-microbial: no damage to microorganisms, insects.

PROPERTIES

Properties	Unit	3	5	8	10	15	20	25	30	40
Tensile Strength [ISO 10319]	kN/m	3	5	8	10	15	20	25	30	40
Elongation at Tensile Strength	%	20~100								
CBR Burst Strength [ISO 12236]	N	600	1000	1400	1800	2500	3200	4000	5500	7000
Rate of Deviation in Mass Per Unit Area	%	-5								
Width Deviation Rate	%	-0.5								
Thickness Deviation Rate	%	-10								
Apparent Opening Size 0_{90} [ISO 12956]	mm	0.07~0.2								
Coefficient of Permeability	cm/s	$(1.0\sim9.9)\times(10^{-1}\sim10^{-3})$								
Tear Strength [ISO 9073-4]	N	100	150	200	250	400	500	650	800	1000

Filament Woven Geotextiles

DESCRIPTION

YH Filament woven geotextile is a woven fabric composed of two groups of filaments. The varieties are divided into single-layer woven geotextile(also called geotextile), double-layer geotextile(also called geomold)and machine Weave impermeable cloth. The main raw material are high-strength and low-extension synthetic fiber filaments,durability and corrosion resistance; the characteristics of woven fabrics are stable and the engineering parameter compliance rate is high, which can meet the different purposes of filtration, isolation, and processing Requirements for tendons and protection. It is a relatively high value product in geotechnical engineering.

APPLICATION SCOPE

- In transportation engineering:it can be used for the construction of railway subgrades and highway subgrades.
- In protection engineering, it is suitable for embankment retaining, coastal and side slope protection,sand fixation and soil erosion prevention,Reclamation and environmental project.
- In tunnel engineering, it can serve as a supporting material for waterproof membranes;
- In municipal and greening engineering, it is applicable to anti-seepage treatment of facilities such as artificial lakes and pools.
- In underground waterproofing engineering, it can act as the base layer for waterproof materials in underground garages.

PERFORMANCE FEATURE

- High strength: Raw materials have high original strength. After weaving, a regular interlaced structure is formed, and the comprehensive carrying capacity is further improved.
- Durability: Not easy to change, decompose and weather. Can maintain its original characteristics for a long time.
- Corrosion resistance: Synthetic chemical fiber is generally resistant to acid, alkali, insects and mold.
- Water permeability: woven fabric can effectively control its structural pores to achieve a certain water permeability.
- Convenient storage and transportation: Because it is light and can be packed according to certain requirements, it is convenient to transport, store and construct.

SPECIFICATION

Weight: 200-950g/m²
Width: 2.0m-5.2mm

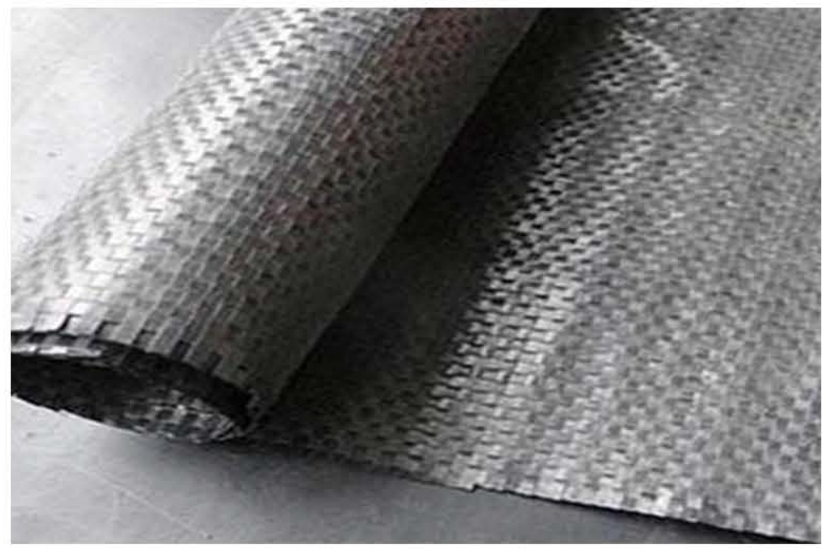
PROPERTIES

Properties	Unit	35	50	65	80	100	120	140	160	180	200	250
Tensile Strength(MD) [ISO 10319]	kN/m	35	50	65	80	100	120	140	160	180	200	250
Tensile Strength(CMD) [ISO 10319]	kN/m	24.5	35	45.5	56	70	84	98	112	126	140	175
Elongation at Tensile Strength*	%	30										
Width Deviation Rate	%	-1										
CBR Burst strength [ISO 12236]	kN	2	4	6	8	10.5	13	15.5	18	20.5	23	28
Apparent Opening Size O_{90} [ISO 12956]	mm	0.05~0.50										
Tear Strength [ISO 9073-4]	kN/m	0.4	0.7	1	1.2	1.4	1.6	1.8	1.9	2.1	2.3	2.7
Mass Per Unit Area [ISO 9864]	g/m^2	140	200	260	320	390	460	530	600	680	760	950

Woven Film Yarn Geotextile

DESCRIPTION

YH woven film yarn geotextile is made of polypropylene and polypropylene flat yarn.Different weaving equipment and processes are used to weave the warp and weft yarns into a cloth shape, which can be woven into different thicknesses and densities according to different ranges of use, with good stability.



APPLICATION SCOPE

- In the agricultural sector: weed control fabric is widely used. It can be applied in vegetable greenhouses and flower cultivation to prevent the growth of weeds.
- Water conservancy project: Riverbanks; Dams protection; Diversion irrigation; Reservoir seepage and consolidation project; Filling sandbags.
- Road Project: Soft foundation treatment; Slope protection; Road surface antireflection structure layer,Drainage system; Greenbelt.
- Railway project: railway foundation reinforcement;Embankment slope strengthen layer Tunnel lining layer.

SPECIFICATION

Weight: 120-400g/m²

Width: 1.0m-6.0mm

Material: PP

PERFORMANCE FEATURE

- Reinforcement: It can stabilize the transfer of the project during long-term use.and can transfer or assign the local stress acting on the soil to a larger area.
- Separation effect: The geotextile separates different geotechnical structural materials to form a stable interface, and exerts its own characteristics and overall function according to requirements.
- Drainage and filtering effect: The geotextile allows water to pass through and blocks the loss of sand particles. When used for drainage, placing the geotextile in poorly water-permeable soil can slowly pump water and quickly move water alongthe geotextile. The purpose of draining.
- Woven geotextile has geotextile and geomembrane, which can be used as tensiondiaphragm between two materials with different pressure.
- Blocking function: the function of placing geotextile horizontally in the passage of suspended liquid with suspended particles to prevent fine mud particles and allowing the liquid to pass through construct.

PROPERTIES

Properties	Unit	20-15	30-22	40-28	50-35	60-42	80-56	100-70
Tensile Strength(CD) [ISO 10319]	kN/m	20	30	40	50	60	80	100
Tensile Strength(CMD) [ISO 10319]	kN/m	15	22	28	35	42	56	70
Elongation at Tensile Strength* [ISO 10319]	%	28						
Trapezoidal Tear Strength(CD) [ISO 9073-4]	kN	0.3	0.45	0.5	0.6	0.75	1	1.2
CBR Burst strength [ISO 12236]	kN	1.6	2.4	3.2	4	4.8	6	7.5
Coefficient of Permeability	cm/s	10^{-1}~10^{-4}						
Apparent Opening Size 0_{95} [ISO 12956]	mm	0.08~0.5						
Mass Per Unit Area [ISO 9864]	g/m²	120	160	200	240	280	340	400

Smooth Geomembrane

DESCRIPTION

YH HDPE geomembrane are impermeable HDPE geomembrane utilized in various civil engineering and environmental projects, offering robust mechanical properties, resistance to puncture, tear, and environmental stress cracking, making them ideal for applications.

Smooth geomembrane have been used in any project not requiring enhanced frictional properties. They provide outstanding mechanical and endurance properties.

PERFORMANCE FEATURE

- High tensile strength and fracture elongation index, strong stress, can be used in a variety of different harsh geological and climatic conditions, especially suitable for geological uneven settlement area.
- Coil width is large, can be large area construction, reduce welding surface, convenient construction.
- Good chemical stability, acid and alkali resistance, corrosion resistance.
- It has a large temperature range and a long service life.
- It has excellent resistance to environmental stress cracking.
- Good flexibility, with a high anti-seepage coefficient.

SPECIFICATION

Thickness: 0.5mm-3.0mm
Width: 1.0m-9.0m
Color: Black Green Blue White
Other colors can be customized
Material: HDPE

PROPERTIES

Properties	Unit	Inspection Standards	0.75	1	1.25	1.5	2	2.5	3
Thickness (min.ave.)	mm	ASTM D 5199	0.75	1	1.25	1.5	2	2.5	3
Lowest individual of 10 values	%	ASTM D 5199	-10						
Density	g/cc	ASTM D1505/D792	0.94						
Yield Strength	kN/m	ASTM D 6693 Type IV	11	15	18	22	29	37	44
Break Strength	kN/m		20	27	33	40	53	67	80
Yield Elongation	%		12	12	12	12	12	12	12
Break Elongation	%		700	700	700	700	700	700	700
Tear Resistance (min.ave.)	N	ASTM D 1004	93	125	156	187	249	311	374
Puncture Resistance	N	ASTM D 4833	240	320	400	480	640	800	960
Stress Crack Resistance	hr	ASTM D 5397	500						
Carbon Black Content	%	ASTM D 4218	2.0~3.0						
Carbon Black Dispersion	/	ASTM D 5596	For 10 different views: 9 in Categories 1 or 2 and 1 in Category 3						
Oxidative Induction Time (min.ave.) (a) Standard OIT or. (b)High Pressure OIT	min	ASTM D 3895 ASTM D 5885	100min 400min						
Oven Aging At 85°C Retained After90 days (a) Standard OIT or. (b) High Pressure OIT	%	ASTM D 5721 ASTM D 3895 ASTM D 5885	55% 80%						
UV Resistance High Pressure OIT.Retained After1600hrs	%	ASTM D 7238 ASTM D 5885	50%						

APPLICATION SCOPE

- Aquaculture: Sea water or fresh water shrimp or fish farming pond.
- Mining:Washing Pond, heap leaching pond, ash field, dissolving and sedimentation Pond, tailing bottom lining etc.
- Landscaping: River,Reservoir, artificial lake, golf course pond waterproofing,artificial grass waterproof and moisture-proof.
- Salt industry: Salt farm crystallization Pond,collection Pond.

S-Textured Geomembrane

DESCRIPTION

YH S-Textured geomembrane are manufactured by impinging the smooth surfaces of the geomembrane with molten polyethylene mixed with hot air under high pressure and temperature, as in a welding process. As a result of this process, the geomembrane exhibits superior flatness. The ability to build steeper slopes provides cost savings, by increasing the capacity of the project. The surface structure enhances safety at work.

APPLICATION SCOPE

- Oil and Gas: Chemical plant, refinery, oil storage tank etc.
- Solid or liquid waste treatment: Landfill,waste waterplant,industrial or hospital .
- Waste treatment siteanti-seepage.
- Water conservancy Project: River embankment, lake dam, tailing dam, sewage dam and reservoir,channel,Vertical wall, slope protection seepage control.

PERFORMANCE FEATURE

- Long service life:It has a large temperature range and along service life.
- Strong adaptability: High tensile strength and fracture elongation,strong strain force,suitable for use in various harsh geological and climatic conditions.
- Strong environmental resistance:Excellent resistance to environmental stress cracking.
- Good chemical stability:strong acid and alkali resistance, and corrosion resistance.
- Resistance to bearing deformation:The friction coefficient is high, and the anti slip function is obvious. It is very suitable for laying the slopes around the landfill site,which is more conducive to the construction of the upper structure.

PROPERTIES

Properties	Unit	Inspection Standards	0.75	1	1.25	1.5	2	2.5	3
Nominal Thickness	mm	/	0.75	1	1.25	1.5	2	2.5	3
Thickness (min. avg.)	%	ASTM D 5994	-5						
Lowest individual for 8 out of 10 values			-10						
lowest individual for any of the 10 values			-15						
Asperity Height (min. avg.)	mm	ASTM D 7466	0.4						
Density	g/cc	ASTM D 1505/D 792	0.94						
Yield Strength	kN/m	ASTM D 6693 Type IV	11	15	18	22	29	37	44
Break Strength	kN/m		20	27	33	40	53	67	80
Yield Elongation	%		12	12	12	12	12	12	12
Break Elongation	%		700	700	700	700	700	700	700
Tear Resistance	N	ASTM D 1004	93	125	156	187	249	311	374
Puncture Resistance	N	ASTM D 4833	240	320	400	480	640	800	960
Stress Crack Resistance	hr	ASTM D 5397	500						
Carbon Black Content	%	ASTM D 4218	2.0~3.0						
Carbon Black Dispersion	/	ASTM D 5596	For 10 different views: 9 in Categories 1 or 2 and 1 in Category 3						
Oxidative Induction Time（min.ave.） (a) Standard OIT or. (b)High Pressure OIT	min	ASTM D 3895 ASTM D 5885	100min 400min						
Oven Aging At 85℃ Retained After90 days (a) Standard OIT or. (b) High Pressure OIT	%	ASTM D 5721 ASTM D 3895 ASTM D 5885	55% 80%						
UV Resistance High Pressure OIT.Retained After1600hrs	%	ASTM D 7238 ASTM D 5885	50%						

C-Textured Geomembrane

DESCRIPTION

YH C-Textured Geomembrane are made of co-extrusion technology.Their surfaces are covered with raised column particles to increase the friction.

The textured points of the pillar point geomembrane are evenly distributed and beautiful. Column-point geomembrane can be used in slope anti-seepage projects or vertical slope engineering to achieve anti-seepage, anti-skid, and anti-fouling effects.

PROPERTIES

Properties	Unit	Inspection Standards	0.75	1	1.25	1.5	2	2.5	3
Nominal Thickness	mm	/	0.75	1	1.25	1.5	2	2.5	3
Thickness (min. avg.)	%	ASTM D 5994	-5						
Lowest individual for 8 out of 10 values			-10						
lowest individual for any of the 10 values			-15						
Asperity Height (min. avg.)	mm	ASTM D 7466	0.4						
Density	g/cc	ASTM D 1505/D 792	0.94						
Yield Strength	kN/m	ASTM D 6693 Type IV	11	15	18	22	29	37	44
Break Strength	kN/m		18	24	30	36	48	60	72
Yield Elongation	%		12	12	12	12	12	12	12
Break Elongation	%		500	500	500	500	500	500	500
Tear Resistance	N	ASTM D 1004	93	125	156	187	249	311	374
Puncture Resistance	N	ASTM D 4833	210	280	360	430	560	700	840
Stress Crack Resistance	hr	ASTM D 5397	500						
Carbon Black Content	%	ASTM D 4218	2.0~3.0						
Carbon Black Dispersion	/	ASTM D 5596	For 10 different views: 9 in Categories 1 or 2 and 1 in Category 3						
Oxidative Induction Time (min.ave.) (a) Standard OIT or. (b)High Pressure OIT	min	ASTM D 3895 ASTM D 5885	100min 400min						
Oven Aging At 85°C Retained After90 days (a) Standard OIT or. (b) High Pressure OIT	%	ASTM D 5721 ASTM D 3895 ASTM D 5885	55% 80%						
UV Resistance High Pressure OIT.Retained After1600hrs	%	ASTM D 7238 ASTM D 5885	50%						

N-Textured Geomembrane

DESCRIPTION

YH N-Textured Geomembrane is produced using co-extrusion technology. Its surface is roughened through the use of nitrogen. As it is manufactured through an in-line process, customer availability is enhanced, and lead times are reduced. This product is utilized in applications necessitating greater frictional resistance, allowing for the construction of steeper slopes.

PROPERTIES

Properties	Unit	Inspection Standards	0.75	1	1.25	1.5	2	2.5	3
Nominal Thickness	mm	/	0.75	1	1.25	1.5	2	2.5	3
Thickness (min. avg.)	%	ASTM D 5994	-5						
Lowest individual for 8 out of 10 values			-10						
lowest individual for any of the 10 values			-15						
Asperity Height (min. avg.)	mm	ASTM D 7466	0.25						
Density	g/cc	ASTM D 1505/D 792	0.94						
Yield Strength	kN/m	ASTM D 6693 Type IV	11	15	18	22	29	37	44
Break Strength	kN/m		8	10	13	16	21	26	32
Yield Elongation	%		12	12	12	12	12	12	12
Break Elongation	%		100	100	100	100	100	100	100
Tear Resistance	N	ASTM D 1004	93	125	156	187	249	311	374
Puncture Resistance	N	ASTM D 4833	200	267	333	400	534	667	800
Stress Crack Resistance	hr	ASTM D 5397	500						
Carbon Black Content	%	ASTM D 4218	2.0~3.0						
Carbon Black Dispersion	/	ASTM D 5596	For 10 different views: 9 in Categories 1 or 2 and 1 in Category 3						
Oxidative Induction Time (min.ave.) (a) Standard OIT or. (b)High Pressure OIT	min	ASTM D 3895 ASTM D 5885	100min 400min						
Oven Aging At 85°C Retained After90 days (a) Standard OIT or. (b) High Pressure OIT	%	ASTM D 5721 ASTM D 3895 ASTM D 5885	55% 80%						
UV Resistance High Pressure OIT.Retained After1600hrs	%	ASTM D 7238 ASTM D 5885	50%						

Composite Geomembrane

DESCRIPTION

YH Composite geomembrane is an impermeable material formed by combining geotextile with geomembrane. This material is produced by laminating or thermally bonding one or two layers of geotextile with a polymer material (typically PE).
The two-fabric-one-membrane or one-fabric-one-membrane structure formed can reduce the thickness of the support layer and protective layer in the engineering anti-seepage structure, enhance the tensile and shear strength of the anti-seepage main body, and effectively reduce costs.

APPLICATION SCOPE

- Roadbed and roof anti-seepage.
- River embankments, lake dams, channels, and storage tanks (pits, mines).
- The foundation of highways,and railways.
- Horizontal anti-seepage cover for embankment,vertical anti-seepage layer for foundation,construction cofferdam, and waste disposal area.
- Seawater and freshwater aquaculture farms.
- Subway, basement and tunnel anti-seepage lining.

PERFORMANCE FEATURE

- Tear resistance:The product has high physical and mechanical performance indicators such as tensile strength, tear resistance,and bursting resistance. It has high strength, good elongation performance,large deformation modulus,acid and alkali resistance,corrosion good resistance, aging resistance,and anti-seepage performance.
- Good flexibility:Good flexibility, in addition to geotextile isolation, drainage, reinforcement,protection and other functions,it also has sealing (anti-seepage) function.

SPECIFICATION

One fabric one membrane

Base fabric:100-800g/m²

Membrane thickness:0.3-1.5mm

Two fabric one membrane

Base fabric:100-600g/m²

Membrane thickness:0.3-1.5mm

PROPERTIES

General Technical Indicators for Composite Films

Properties		Unit	0.3	0.4	0.5	0.6	0.7	0.8	1
Thickness of Membrane		mm	0.3	0.4	0.5	0.6	0.4	0.8	1
Proofed Hydrostatic Pressure	one fabric one membrane	Mpa	0.5	0.6	0.8	1	1.2	1.4	1.6
	two fabric one membrane		0.6	0.8	1	1.2	1.4	1.6	1.8
Peel Resistance [ISO 10319]		N/cm	6						
Elongation at Tensile Strength [ISO 10319]		%	40~80						

Filament Composite Geomembrane

Properties	Unit	10	12	14	16	18	20	25	30	40
Tensile Strength [ISO 10319]	kN/m	10	12	14	16	18	20	25	30	40
CBR Burst Strength [ISO 10319]	kN	2.1	2.4	2.7	3.0	3.2	3.4	3.6	4.0	5.0
Tear Strength [ISO 9073-4]	kN	0.3	0.4	0.5	0.6	0.6	0.7	0.8	1.0	1.2

Short-fiber Composite Geomembrane

Properties	Unit	5	8	10	12	14	16	18	20
Tensile Strength [ISO 10319]	kN/m	5.0	8.0	10.0	16.0	14.0	16.0	18.0	20.0
CBR Burst Strength [ISO 10319]	kN	1.1	1.5	1.9	2.2	2.5	2.8	3.0	3.2
Tear Strength [ISO 9073-4]	kN	0.2	0.3	0.3	0.4	0.5	0.6	0.6	0.7

Composite Drainage Mesh

DESCRIPTION

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.

YH Composite drainage mesh provides a complete "anti-filtration - drainage - protection" effect. The unique three-dimensional structure of its core can withstand high compressive loads during the entire service life, while maintaining a considerable thickness and offering excellent hydraulic conductivity.

YH geomembranes are available with smooth surfaces. They have been constantly used in any project not requiring enhanced frictional properties. They provide outstanding mechanical and endurance properties.

APPLICATION SCOPE

- Mainly used in Drainage in landfills (groundwater drainage, leachate detection layer, leachate collection and drainage, closed landfill gas collection and drainage, highway subgrade and pavement drainage, railway drainage, tunnel drainage, underground structure drainage).
- Drainage for retaining wall surfaces, gardens and sports fields.

PERFORMANCE FEATURE

- High drainage (equivalent to one metre thick gravel drainage).
- High tensile strength.
- Reduces the chance of geotextiles becoming embedded in the mesh core and maintains stable drainage over time.
- Long-term resistance to high pressure loads (withstands compression loads of approximately3000 Ka).
- Corrosion resistance, acid and alkali resistance, long service life.
- Easy to construct, shorten the construction period and reduce costs.

SPECIFICATION

Thickness: 5.0mm-8.0mm
Width: 3.0m-6.0m
Material: HDPE

PROPERTIES

Properties	Unit	TG-5	TG-6	TG-7	TG-8
Unit widthplane flow(Normal load500kPa, hydraulic gradient 0.1) [ASTM D 4716]	L/(m·min)	$3*10^{-4}$	$3.8*10^{-4}$	$4.4*10^{-4}$	$5*10^{-4}$
Drainage mesh Thickness [ASTM D 5199]	mm	5	6	7	8
Drainage mesh Tensile Strength [ASTM D 7179]	kN/m	8	10	12	14
Drainage Density [ISO1183]	g/m^3	0.94			
Drainage Carbon Black Content [ASTM D 1603]	%	2			
Peel Strength [ASTM D 7005]	kN/m	0.17			
Geotextile Mass Per Unit Area	g/m^2	200			

Biaxial Geogrid

DESCRIPTION

YH Biaxial geogrid is made of high molecular polymer after extruded and laminated and punched into regular mesh before longitudinal stretching.The material on the longitudinal and transverse has great tensile strength,this kind of structure in the soil can also provide a more effectively undertake the chain and the spread of the thought system, suitable for large area of permanent bearing foundation reinforcement.

APPLICATION SCOPE

Make reinforcement treatment for various kinds of soft soil foundation to evenly distribute load stress and reduce un-even settlement , used in highway,railway,port , airport and municipal.

PERFORMANCE FEATURE

- Exhibits high tensile strength.
- Demonstrates minimal stress elongation rate, providing excellent lateral confinement and reinforcement capabilities for structures.
- Possesses superior physical and chemical stability, with outstanding resistance to aging, soil burial, and corrosion.
- Features a high friction coefficient, and its mesh structure fully integrates with soil-rock formations to enhance structural stability.

PROPERTIES

Properties	Unit	15-15	20-20	25-25	30-30	35-35	40-40	45-45	50-50
Tensile strength [ISO 10319]	kN/m	15	20	25	30	35	40	45	50
Strength At 2% Elongation [ISO 10319]	kN/m	5.0	7.0	9.0	10.5	12.0	14.0	16.0	17.5
Strength At 5% Elongation [ISO 10319]	kN/m	7.0	14.0	17.0	21.0	24.0	28.0	32.0	35.0
Elongation At Nominal Strength(MD)* [ISO 10319]	%	15.0							
Elongation At Nominal Strength(CMD)* [ISO 10319]	%	13.0							

YUHONG

Uniaxial Geogrid

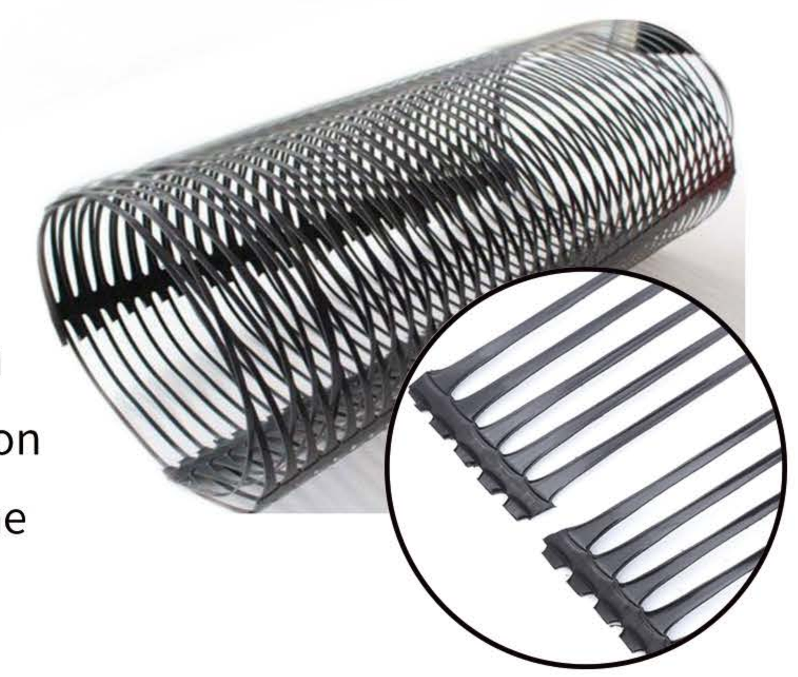
YUHONG™

DESCRIPTION

YH Uniaxial geogrid is made of high molecular polymer after extruded and laminated and punched in to regular mesh before longitudinal stretching. This process makes high molecule in direct line state in oblong oval net structure with uniform distribution and high node intensity. This structure has rather high tensile strength and stretch modulus. The soil offers ideal force carrying and diffusing chain system.

APPLICATION SCOPE

Applicable for various types of soft foundation reinforcement treatments, enhancing and improving the bearing capacity of roadbed subgrades, as well as the stability of retaining walls under long-term stress conditions. Suitable for applications in steep slopes, dams, and abutment reinforcements, this solution improves engineering quality and extends the service life of the project.



PROPERTIES

PP uniaxial geogrid

Properties	Unit	35	50	80	120	160	180
Tensile strength [ISO 10319]	kN/m	35	50	80	120	160	180
Strength At 2% Elongation [ISO 10319]	kN/m	7.5	12	21	33	47	52
Strength At 5% Elongation [ISO 10319]	kN/m	21.5	23	40	65	93	103
Elongation At Nominal Strength* [ISO 10319]	%	11.5					

HDPE uniaxial geogrid

Properties	Unit	35	50	80	120	160	200
Tensile strength [ISO 10319]	kN/m	35	50	80	120	160	200
Strength At 2% Elongation [ISO 10319]	kN/m	10	12	28	42	56	70
Strength At 5% Elongation [ISO 10319]	kN/m	22	28	56	84	112	140
Elongation At Nominal Strength* [ISO 10319]	%	10.0					

Warp Knitting Polyester Geogrid

DESCRIPTION

YH Warp knitting polyester geogrid selects high tensity synthetic fiber as raw material,uses the warp knitting oriented structure,latitude and longitude in the fabric to the yarn between not curving condition,the intersection unifies mutrally with the excel in textile fiber filament bundle,forms the reliable combining site,displays its mechanical properties fully.

APPLICATION SCOPE

- Reinforcement and strengthening of soft soil subgrades of various roads such as highways, railways, and municipal roads can effectively improve the strength of the subgrade and delay the reflection cracks of the roads.
- In water conservancy projects, it is used for the reinforcement and isolation of dams and rivers, improvement of the bearing capacity and stability of the foundations.
- It is used for the reinforcement of embankment slopes and retaining walls to enhance the overall strength.

PERFORMANCE FEATURE

- Have extremely high tensile strength.
- Have a relatively small elongation rate.
- Be resistant to erosion and aging.
- Have a strong biting force with the base material.
- Be lightweight and have a drainage function.

PROPERTIES

Properties	Unit	30-30	50-50	80-80	100-100	150-150	200-200
Tensile strength(MD) [ISO 10319]	kN/m	30	50	80	100	150	200
Tensile strength(CMD) [ISO 10319]	kN/m	30	50	80	100	150	200
Strength At 2% Elongation [ISO 10319]	kN/m	5.4	9	14.4	18	27	36
Strength At 5% Elongation [ISO 10319]	kN/m	10.8	18	28.8	36	54	72
Elongation At Nominal Strength* [ISO 10319]	%	13					

Glass Fiber Geogrid

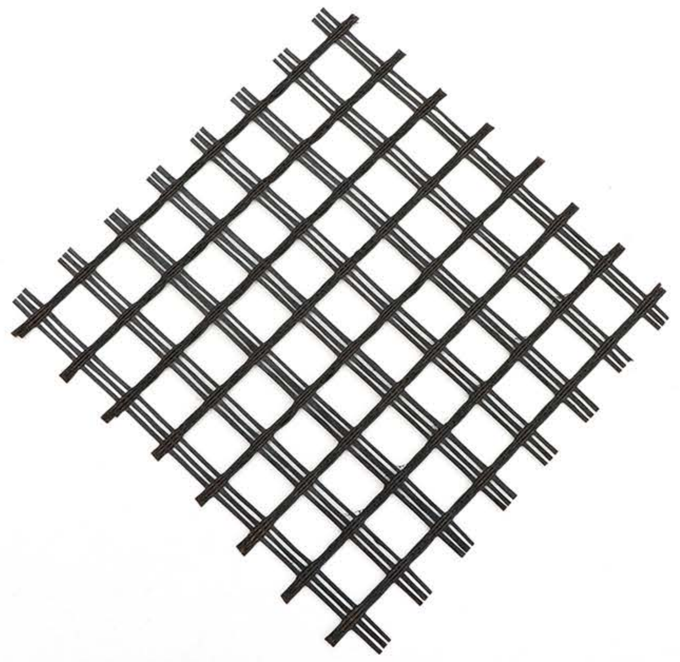
YUHONG™

DESCRIPTION

YH Glass fiber geogrid is a planar network material made of high-quality reinforced alkali-free glass fiber yarns. It adopts a warp-knitted directional structure, making full use of the strength of the yarns in the fabric to improve its mechanical properties. As a result, it has good tensile strength, tear resistance, and creep resistance. It is then coated with high-quality modified asphalt.

APPLICATION SCOPE

Strengthen bitumen concrete roadway,reduce and prevent various kinds of reflection gaps on roadway.



PERFORMANCE FEATURE

- High modulus, light weight, good toughness, corrosion resistance.
- Long service life, high tensile strength and low elongation, no long-term creep, good physical and chemical stability, good thermal stability, fatigue cracking resistance.
- High temperature rutting resistance, low temperature shrinkage cracking resistance, and delay and reduction of reflective cracks.

PROPERTIES

Properties	Unit	30-30	50-50	60-60	80-80	100-100	120-120	150-150
Tensile strength(MD) [ISO 10319]	kN/m	30	50	60	80	100	120	150
Tensile strength(CMD) [ISO 10319]	kN/m	30	50	80	80	100	120	150
Elongation At Nominal Strength* [ISO 10319]	%	4						

Steel-plastic Weid Geogrid

DESCRIPTION

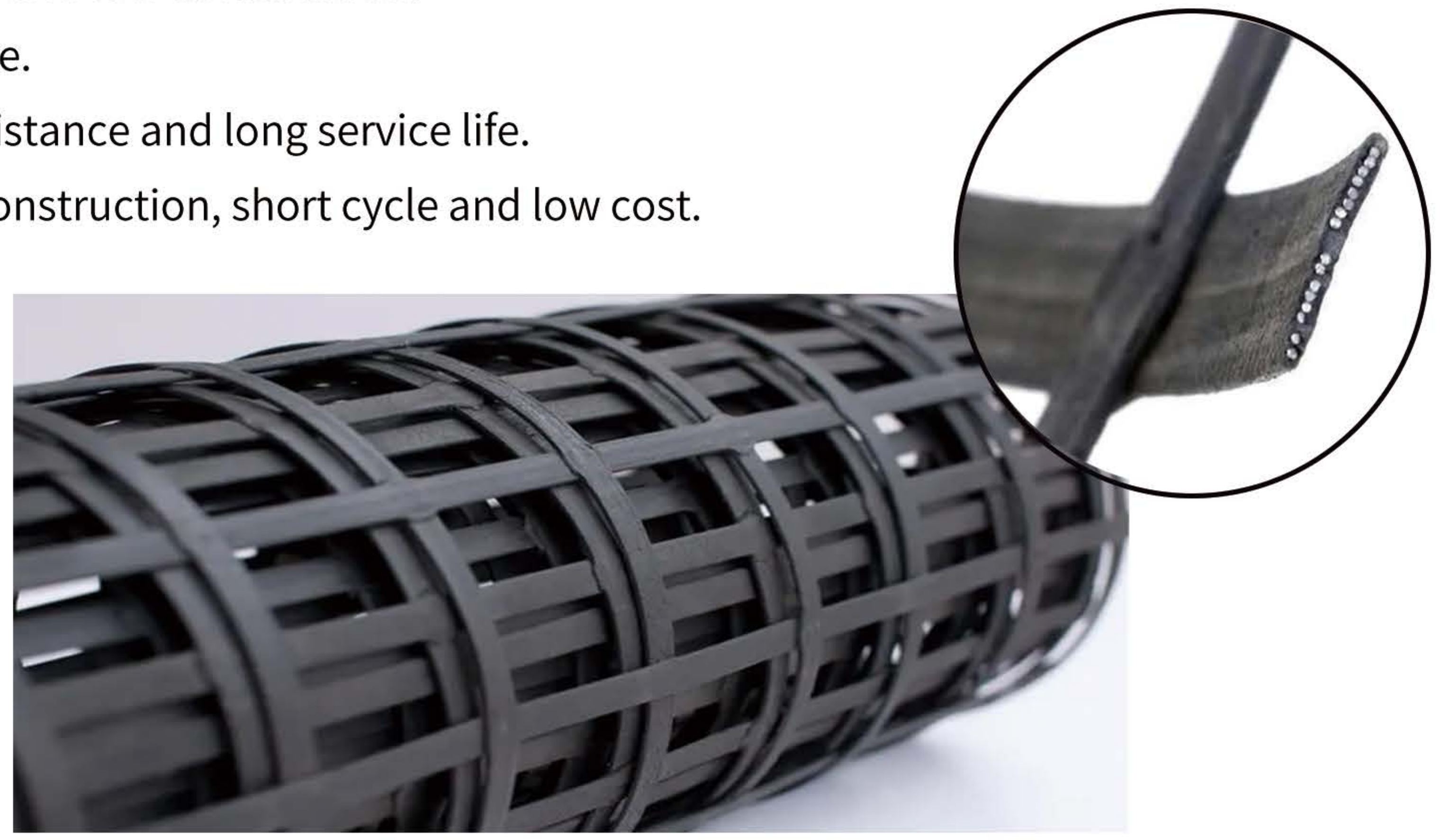
YH Biaxial steel-plastic weld geogrid is composed of steel reinforcement with the novel process.It is extruded to form a composite high-strength tensile strip with rough embossed patterns on the surface. Using such single strips, they are woven or clamped and arranged vertically and horizontally at a certain interval, and the junctions are welded by special strengthened bonding fusion welding technology to form the product.

APPLICATION SCOPE

Mainly applied to soft soil foundation reinforcement, retaining wall, and pavement anti-crack projects in highways, railways, bridge abutments, approach roads, docks, revetments, dams, slag fields, and other fields.

PERFORMANCE FEATURE

- High strength and low deformation.
- Low creep rate.
- Corrosion resistance and long service life.
- Convenient construction, short cycle and low cost.



PROPERTIES

Properties	Unit	50-50	60-60	80-80	100-100	120-120	150-150
Tensile strength(MD) [ISO 10319]	kN/m	50	60	80	100	120	150
Tensile strength(CMD) [ISO 10319]	kN/m	50	60	80	100	120	150
Elongation At Nominal Strength* [ISO 10319]	%	3					
Limit Detached Force Of Junction [ISO 10319]	N	300					

Geocell

DESCRIPTION

YH Plastic geocells are three-dimensional grid structures made of plastic strips interconnected through processes such as welding, fusion bonding, injection molding, and mortise-tenon joints, which form a quadrilateral or polygonal honeycomb shape when unfolded.It can handle soft foundations to increase their bearing capacity, be laid on slopes to form slope protection structures.

APPLICATION SCOPE

- Stabilizing railway sub grades and road soft foundations.
- Capable of firmly bearing heavy embankments and retaining walls.
- Reinforcing support structures for pipelines and sewers.
- Avoiding mudslides and forming solid load-bearing mixed barriers.
- Stable independent walls, docks, embankments, etc.
- Governing deserts, beaches, riverbeds and river banks.

PERFORMANCE FEATURE

- Have extremely high tensile strength and small elongation rate.
- Be resistant to erosion and aging.
- Have a strong biting force with the base material.
- Be lightweight and have a drainage function.

PROPERTIES

Properties	Unit	Ultrasonic welding	Plastic bolt connection	Injection connection
Tensile yield strength [ISO 10319]	MPa	20		
Elongation at yield* [ISO 10319]	%	15		
Tear reslstance [ISO 9073-4]	N	120		
Distance of joint	mm	330~800		
Peeling strength [ASTM D 638]	N/cm	100	100	160
Tensile strength between geocell slice [ASTM D 638]	N/cm	190	140	320
Height of geocell	mm	50~200		

Geosynthetic Clay Liners

DESCRIPTION

YH Geosynthetic clay liners(GCL) is a new type of geosynthetic material. It is a blanket - like waterproof roll material made by mixing bentonite particles and corresponding admixtures as raw materials, and fixing the bentonite particles between the sodium bentonite blanket and the plastic woven cloth through a needling process. The bentonite waterproof blanket not only has the characteristics of geosynthetic materials, but also has waterproof (anti - seepage) performance.

OYH can not only provide ordinary GCL, but also natural GCL. Their physical and chemical properties are extremely stable. They will not deteriorate even if buried underground for hundreds of millions of years, and their durability far exceeds that of the structure itself.

APPLICATION SCOPE

Geosynthetic clay liners are widely used in waste landfill capping and cutoff walls to containpollution,mining base seals, canal and dam liners, lakes and other waterproofing projects.

PERFORMANCE FEATURE

- Excellent water-swellable performance, high compactness, and long-lasting waterproof effect.
- Simple construction, wide range of applicable construction temperatures, and versatile applications.
- Bentonite is a natural inorganic material that does not undergo aging, featuring good durability. It causes no adverse impact on the environment and is eco-friendly.featuring good durability. It causes no adverse impact on the environment and is eco-friendly.cracking resistance, and delay and reduction of reflective cracks.

PROPERTIES

Properties		Unit	NP	OF
Mass Per Unit Area [ASTM D 5993]		g/m^2	4000	4000
Cover layerMass per unit area [ASTM D 5621]		g/m^2	220	220
Currier layer Mass per unit area [ASTM D 5621]		g/m^2	110	110
Bentonite Swell index [ASTM D 5890]		ml/2g	24	24
Bentonite Fluid Loss* [ASTM D 5891]		ml	18	18
Tensile Strength [ASTM D 4595]		N/100mm	600	700
Elongation at Break [ASTM D 4595]		kN/m	10	10
Peel Strength [ASTM D 6496]	Nonwoven Cloth and Woven Cloth	N/100mm	40	40
	PE Film and Nonwoven Fabric	N/100mm	/	30
Hydraulic Conductivity* [ASTM D 5887]		m/s	$5*10^{-11}$	$5*10^{-12}$

Accessories and Machine

1800W WELDING MACHINE

Voltage:120v/230v
Frequency: 50/60hz
Power: 1800w
Welding speed: 0.5-6m/min
Heating temperature: 0-450°C
Seam strength:>85% base material

EXTRUDED WELDING MACHINE

Voltage: 230V
Frequency: 50/60Hz
Extruding Power: Drive Motor 1300w
Hot air drive power: 1600W

Welding rod heating power: 800w
Wind Temperature: 20-620°C
Welding speed: 2kg/h-2.5kg/h

HOT AIR WELDING GUN

Voltage:120V/230v
Power:1600w
Frequency:50/60Hz
Temperature:20-620°C steplessly adjustable
Air volume:Max 180L/Min
Air pressure: 2600Pa
Noise level:Less than 65 dB

E−TYPE LOCK

The E-type lock for geomembrane is a special connector designed to enhance the connection strength between geomembrane and concrete.

connection strength between geomembrane and concrete.

WELDING ROD

Welding rods are completely matched with the resin components of geomembranes, ensuring welding strength and durability.

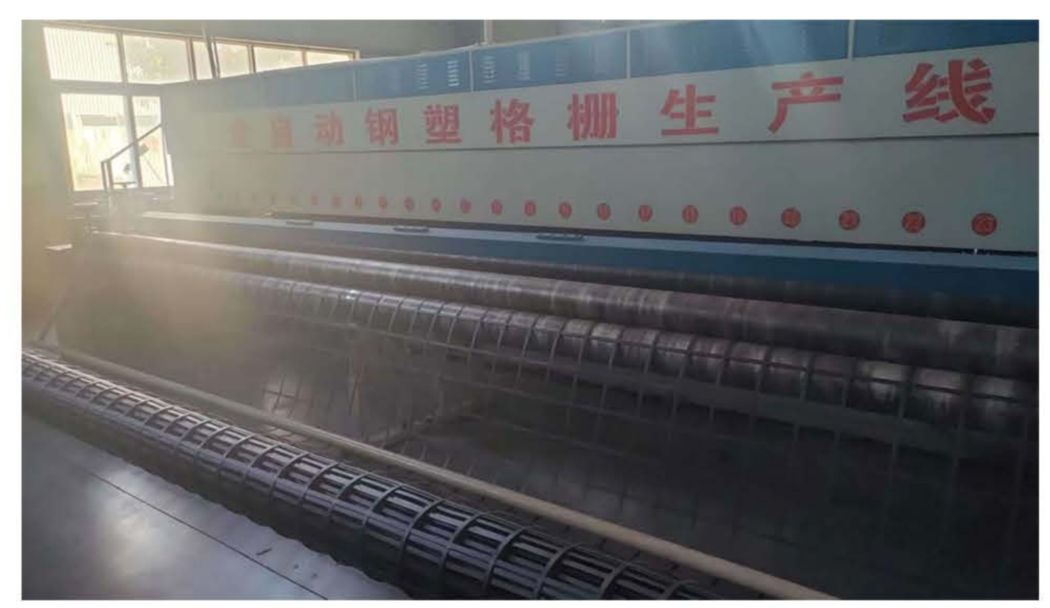
ensuring welding strength and durability.

Raw materials and Production

Our raw materials

OYH has always adhered to the product philosophy of "***quality first***" and uses ***100%*** high-quality virgin materials to ensure superior quality.

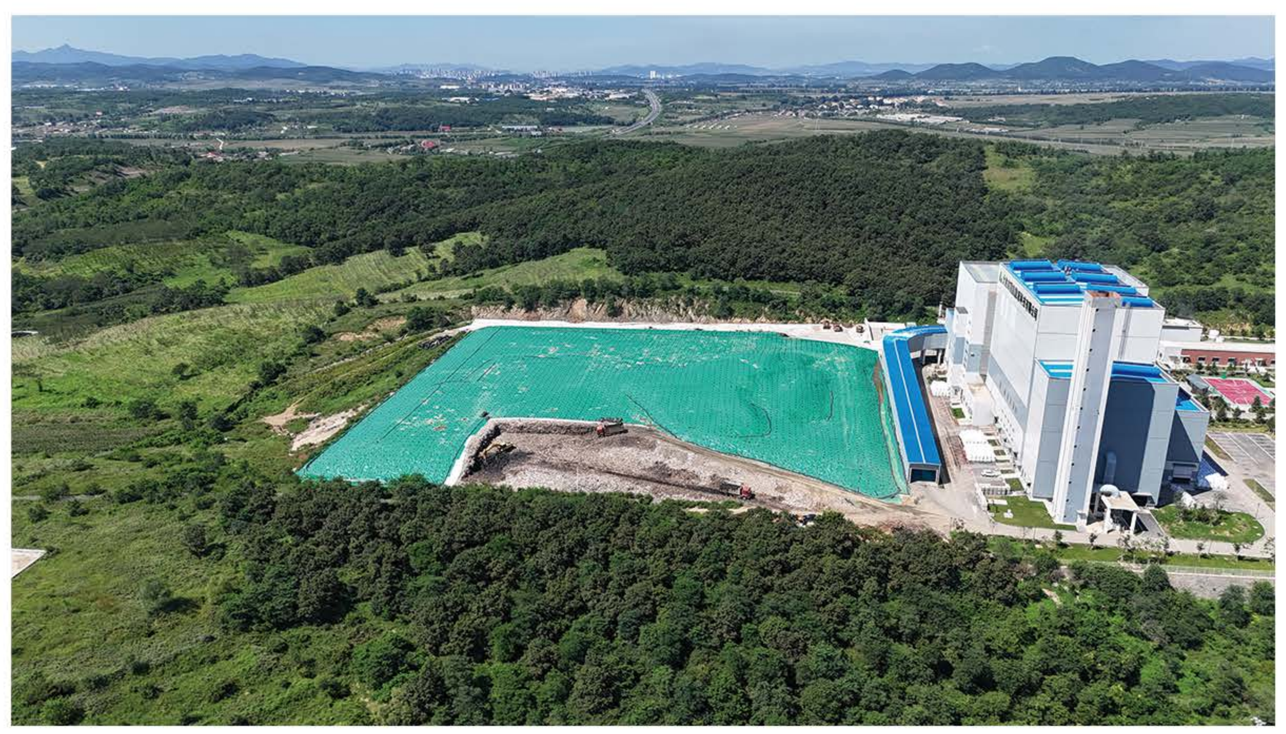
Our production lines



Engineering Case

- Phosphogypsum Resource Centralized Storage Project
  Hubei, China
  (the third largest in the world)

- Hazardous Waste Disposal Project
  Jiangxi, China



- Landfill Closure Project
  Liaoning,China

- Dairy Farm Settling Pond
  Jiangsu, China

- Sewage Pool Construction Project
  Shanxi China

- Aquaculture project
  Shandong China

Engineering Case

- Artificial Lake Project in Tourist Attractions
  Fujian,China

- University Artificial Lake Project
  Henan,China

- Ecological restoration and governance projec
  Zhejiang,China

- Phosphogypsum Resource Centralized Storage Project
  Jiangsu, China

- High - standard Farmland Reservoir Project
  Ningxia China

- Highway expansion project
  Yunnan China