



# **SICHUAN ZHONGLONG ENVIRONMENTAL PROTECTION**

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**Product Catalog & Specifications**

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# 1. HDPE Geomembrane | Anti-seepage Liner

## HDPE Geomembrane (Smooth) | GH-2S



Specifications	Width	4–8 m
	Length	50–100 m
	Thickness	0.25–3.0 mm
	Raw Material	High-Density Polyethylene Carbon Black
Packing	Standard Bagged Roll	
Trade Terms	FOB China   CIF [Port of Destination]	

## HDPE Geomembrane (Textured) | GH-2T1/2



Specifications	Width	4–8 m
	Length	50–100 m
	Thickness	1.0–3.0 mm
	Raw Material	High-Density Polyethylene Carbon Black
Packing	Standard Bagged Roll	
Trade Terms	FOB China   CIF [Port of Destination]	

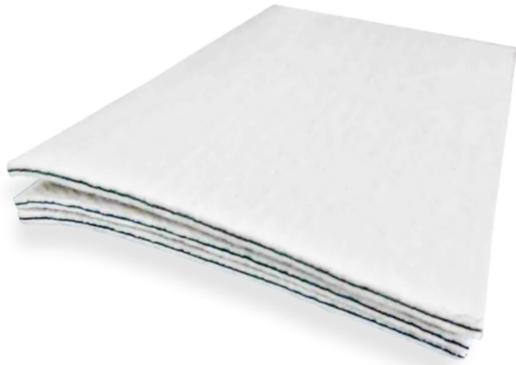
### Product Overview

**Zhonglong HDPE Geomembranes** are engineered from premium-grade virgin resin, in full compliance with the international GRI-GM13 standard. The product offers outstanding dimensional stability, superior mechanical performance and exceptional durability, making it a reliable and cost-effective solution for a wide range of containment and lining applications.

### Applications

- Environmental Protection: Landfill liners, Wastewater treatment, Hazardous waste containment
- Water Conservancy: Reservoir lining, Canal lining, Irrigation ponds
- Mining & Energy: Tailings ponds, Heap leach pads, Oil & gas exploration lining
- Aquaculture & Agriculture: Pond liners, Biogas digesters

## 2. Composite Geomembrane | Anti-seepage Liner



### Composite Geomembrane | 1G1M / 2G1M

Specifications	Width	4–6 m
	Length	50–100 m
	Raw Material	High-Density Polyethylene PP/PET Carbon Black (Optional)
Packing	Standard Bagged Roll	
Trade Terms	FOB China   CIF [Port of Destination]	

### Structure

[1G1M] : Geomembrane with geotextile on one side

[2G1M] : Geomembrane with geotextile on both side

Geotextiles Spec. Options:

100–800 g/m<sup>2</sup>

### Types of Geotextiles Layers



Filament Geotextile



Short Fiber Geotextile



### Product Overview

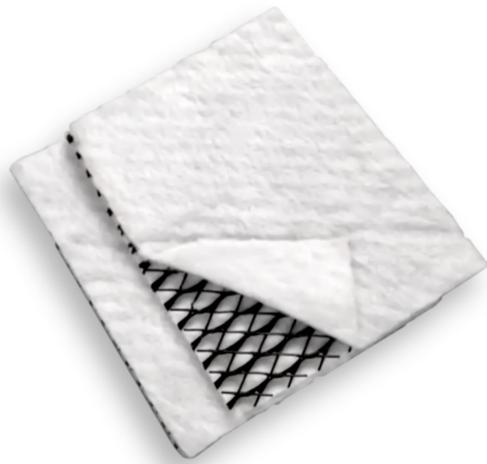
**Zhonglong Composite Geomembrane** is manufactured by bonding a geotextile to one or both sides of a geomembrane. While retaining the inherent properties of the geomembrane, it provides additional functions of drainage, ventilation and protection. This composite impermeable material can reduce the need for constructing secondary protective layers, thereby broadening the application scope of geomembranes and extending the service life of engineering projects.

### Applications

- Environmental Protection: Landfill liners, Wastewater treatment, Hazardous waste containment
- Water Conservancy: Reservoir lining, Canal lining, Irrigation ponds
- Mining & Energy: Tailings ponds, Heap leach pads, Oil & gas exploration lining
- Aquaculture & Agriculture: Pond liners, Biogas digesters

# 3. Composite Drainage Net | High-Load Drainage Sheet

## Three-Dimensional Composite Drainage Net



Specifications	Width	4–6 m
	Length	30–50 m
	Thickness (HDPE Net)	6–8 mm
	Mass per Unit Area (Geotextile)	100–400 g/m <sup>2</sup>
	Raw Material	High-Density Polyethylene PP/PET
Packing	Standard Bagged Roll	
Trade Terms	FOB China   CIF [Port of Destination]	

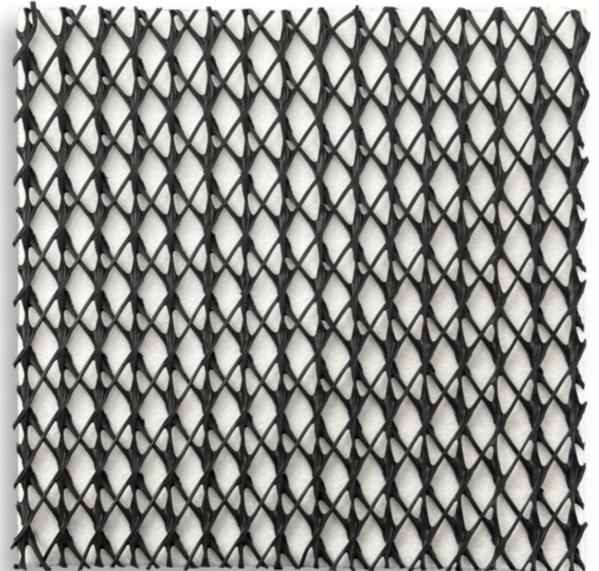
### Types of Geotextiles Layers



Filament Geotextile



Short Fiber Geotextile



### Product Overview

**Zhonglong 3D Composite Drainage Net** is composed of a drainage core made from HDPE with anti-aging additives, which is thermally bonded to two layers of geotextiles.

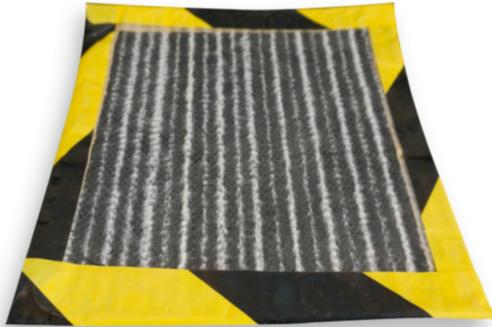
The longitudinal ribs form main drainage channels and intersecting lateral ribs on both sides provide support and stability, ensuring high drainage efficiency even under heavy loads. This structure achieves an integrated "filtration-drainage-protection" function, making it a highly efficient and reliable drainage geosynthetic material.

### Applications

- Environmental Engineering: Landfill leachate collection, Hazardous waste treatment, Fly ash storage
- Energy Infrastructure: Large reservoir/dam internal drainage, Thermal/nuclear power ash pond
- Transportation Infrastructure: Railway, Freight line subgrade, Airport runway/Taxiway base
- Specialized Industrial: Deep-sea reclamation, Large oil tank farm, Massive tailings dam

# 4. GCL | Bentonite Waterproof Blanket

## Natural Sodium Bentonite Waterproof Blanket (GCL)



Specifications	Width	3–6 m
	Length	15–30 m
	Mass per Unit Area	4000–6000 g/m <sup>2</sup>
	Raw Material	Natural Sodium Bentonite PP/PET
Packing	Standard Bagged Roll	
Trade Terms	FOB China   CIF [Port of Destination]	

### Structure

- Top Layer: Non-woven Geotextile
- Core Layer: Sodium Bentonite ( High-purity montmorillonitic material)
- Bottom Layer: Woven Fabric



Natural Sodium Bentonite

### Production Process



Needle-Punching Process

### Three-Layer Needle-Punching Process:

Fibers from the top geotextile are punched through and interlocked with the bottom layer, firmly securing the bentonite core into a unified structure. This process significantly enhances shear and peel resistance, making it ideal for slope and other anti-seepage project.

### Product Overview

Zhonglong GCL utilizes highly expansive natural sodium bentonite particles combined with nonwoven and woven geotextiles. This composite structure delivers enhanced puncture resistance and tensile strength, while the bentonite provides high swell capacity and water absorption. Upon hydration, the bentonite forms an impermeable gel, creating an effective hydraulic barrier for reliable sealing and waterproofing performance.

### Applications

- Landfill liner & cap systems
- Artificial lakes & pond liners
- Tailings pond sealing
- Hazardous waste containment
- Tunnel & underground waterproofing

# 5. GCCM | Cement Mat

## Cement Mat (GCCM)



Specifications	Width	1–4 m
	Length	6–10 m
	Mass per Unit Area	5000–15000 g/m <sup>2</sup>
	Raw Material	Cementitious Component PP/PET
Packing	Standard Bagged Roll	
Trade Terms	FOB China   CIF [Port of Destination]	

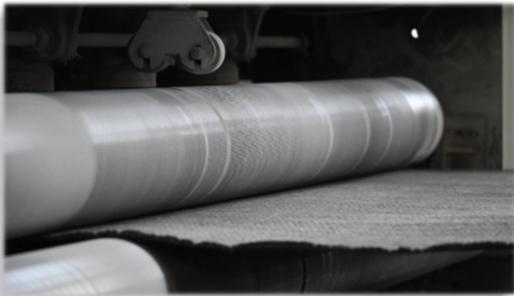
### Structure

- Top Layer: Non-woven Geotextile
- Core Layer: Cementitious Component
- Bottom Layer: Woven Fabric



*Cementitious Component*

### Production Process



*Needle-Punching Process*

#### Three-Layer Needle-Punching Process:

Fibers from the top geotextile are punched through and interlocked with the bottom layer, firmly securing the cementitious core into a unified structure. This process significantly enhances shear and peel resistance, making it ideal protective engineering.

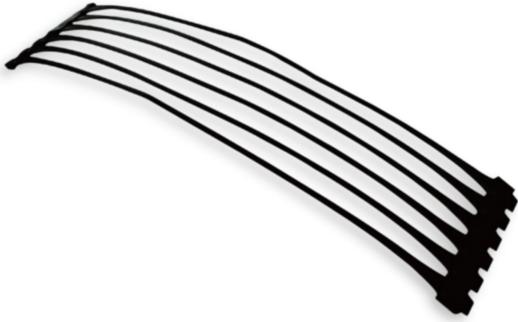
### Product Overview

**Zhonglong GCCM** employs a needle-punched three-layer composite process, which mechanically locks the cementitious components between a nonwoven geotextile and a woven fabric through random needle punching, thereby preventing cement layer from slippage after hydration.

### Applications

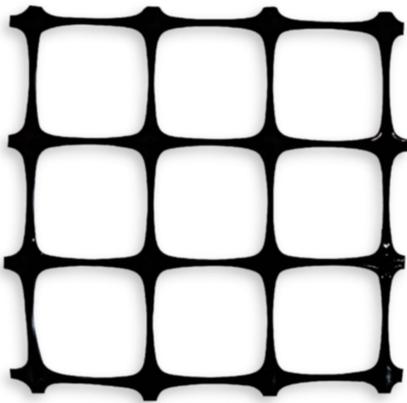
- Replace cast-in-place concrete in light engineering or temporary engineering projects
- Channel lining & slope protection
- Erosion control for steep slopes
- Landfill cover & closure systems
- Temporary/access road stabilization

## 6. Plastic Geogrid | Polymer Stretched Geogrid



### Uniaxial Geogrid | TGDG

Specifications	Width	1 m
	Length	50–100 m
	Tensile Strength	80–200 kN/m
	Raw Material	PP
Packing	Standard Bagged Roll	
Trade Terms	FOB China   CIF [Port of Destination]	

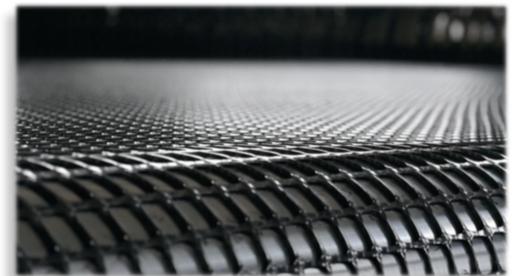


### Biaxial Geogrid | TGSG

Specifications	Width	3–6 m
	Length	50–100 m
	Tensile Strength	15–50 kN/m
	Raw Material	PP
Packing	Standard Bagged Roll	
Trade Terms	FOB China   CIF [Port of Destination]	

### Product Overview

**Zhonglong Plastic Geogrids** are produced from polypropylene (PP) using a punched and stretched process. Uniaxial geogrids provide tensile strengths up to 200 kN/m for slope stabilization, and biaxial geogrids offer up to 50 kN/m in both longitudinal and transverse directions, primarily for soft soil stabilization in roadbeds and pavement foundations. The PP material offers high resistance to acids and alkalis, with excellent elongation to accommodate soil deformation, which makes it suitable for long-term project.



### Applications

- Roadbed & Pavement Engineering
- Slope & Retaining Wall Engineering
- Soft Soil Ground Reinforcement
- Special Sites & Fills

## 7. Non-woven Geotextile | Filament & Short Fiber



### Non-woven Short Fiber Geotextile

Specifications	Width	3–6 m
	Length	50–200 m
	Mass per Unit Area	100–800 g/m <sup>2</sup>
	Raw Material	PP/PET
Packing	Standard Bagged Roll	
Trade Terms	FOB China   CIF [Port of Destination]	



### Non-woven Filament Geotextile

Specifications	Width	3–6 m
	Length	50–200 m
	Mass per Unit Area	100–800 g/m <sup>2</sup>
	Raw Material	PET
Packing	Standard Bagged Roll	
Trade Terms	FOB China   CIF [Port of Destination]	

### Product Overview

**Zhonglong Geotextiles** are manufactured from polypropylene and polyester fibers, providing essential functions of filtration, drainage, and protection. They can also be combined with other geosynthetic materials to form composite products, retaining the performance of the base materials while extending their service life. This makes them suitable for a broad range of application scopes. Length and weight per unit area can be adjusted as needed. Please feel free to consult our technical department for detailed application guidance.



### Applications

- Filtration: Embankments & leachate
- Drainage: Roadbed & building basement
- Protection: Upper and lower protective layers of waterproofing materials (Geomembrane/GCL) etc.
- Separation: Soil and rock mixtures
- Erosion Control: Slopes and exposed areas

## NOTES:

- (1) Other customized specifications adjusted and provided upon request
- (2) Zhonglong all geosynthetics are manufactured in accordance with a Quality Management System which complies with the requirements of ISO 9001:2015 and Environment Management System with the requirements of ISO 14001:2015



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