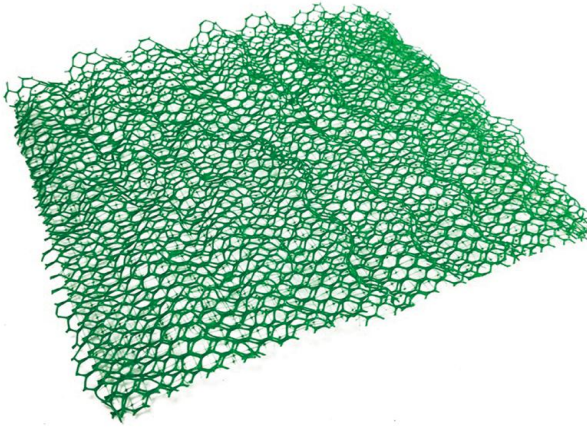
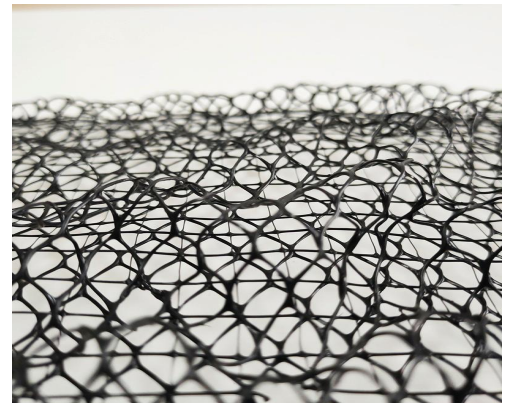


## 3D Geonet Mat



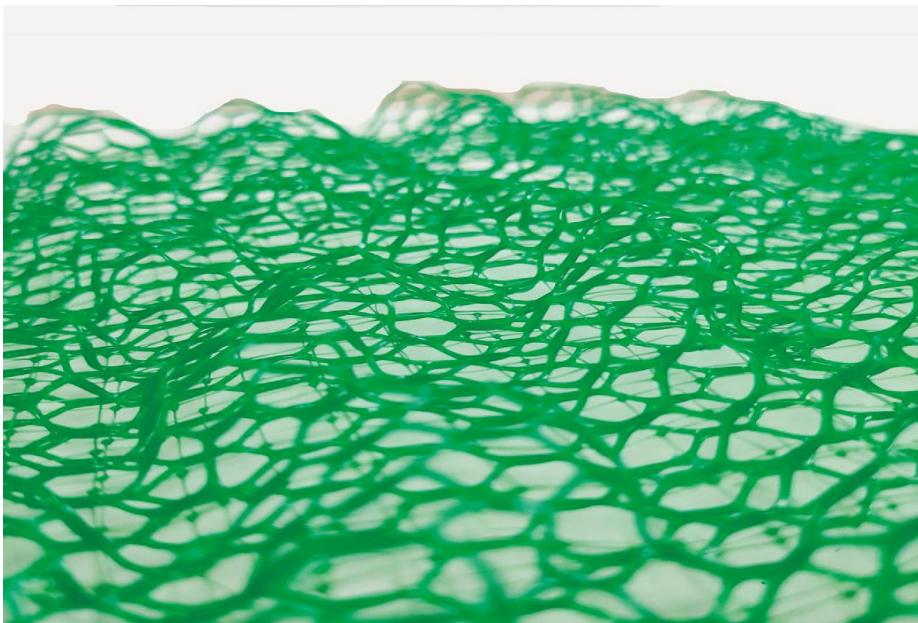
3D Geomat is a three-dimensional or in form of honeycombs water permeable polymer or other synthetical material structures, several layers thermal bonded together. They are widely used for fixing soil, grass and small plants roots, also applied in geosynthetics and other construction field. The three dimensional structure retains a layer of top soil and anchors for growing grass roots thus providing a stable surface highly resistant the forces of rain drops and wash away. 3D Geomat is widely used for creating stable vegetation along river, pond banks and slopes to prevent erosion on processes of surfaces. It is a kind of 3D structural geosynthetic, which is applied to keep the water and land, increase the greening area, and improve the environment.

3D Geomat is a new type of civil engineering material, which belongs to the reinforcement material in the field of new material technology and appears repeatedly in various materials in the national high-tech product catalog. It is a three-dimensional mesh loofah mat used for grass planting and soil consolidation. It has a loose and flexible texture, with 90% of the space being filled with soil, gravel and fine stones. Plant roots can pass through it and grow comfortably, orderly and evenly.



### 3D Geomat Features:

- In the wading project, the excess water can be quickly drained, reduce the pore water pressure, and improve the overall stability of the project.
- Good economy: It is estimated that the use of geocomposite drainage pads to replace traditional drainage pad materials can save 15% to 30% of the cost, which does not include the benefits of the convenience of construction.
- Rapid construction: The use of geocomposite drainage pads is simple and quick to construct, which greatly simplifies the complicated grading process of traditional gravel drainage pads, which can effectively reduce the construction period and save costs.
- Before the greensward grows, it prevents the surface of the land from the erosion of the wind and rain.
- Form compound protection layer with the vegetable, standing the wash-out of the high water level and large speed current.



[3D Geomat]

3-D geomat slop protection is a new technology which reinforces the slopes through plants growth. It constructs a protective system with growth capacity at slopes with active plants and geosynthetic engineering materials. According to the characteristics of different terrain, landscape, soil and climate, workers cover the slope surface with a layer of geosynthetics and plant a variety of plants according to certain combination and spacing. The root and stem will be reinforced and the leaves is anti-erosion by plants growth. Through the ecological slope-protection technology treatment, it can form a dense vegetation cover at slope surface. The plant will form twisted roots and branches in the surface soil layer to inhibit the erosion caused by storm effectively. The product can increase the shear strength of soil, reduce the pore water pressure and soil gravity to improve the slope stability and the anti-erosion ability greatly.

## APPLICATION

Three-dimensional geomat(erosion control mat)is a new kind of civil engineering material, which is mainly used as a net pad with three-dimensional structure (like loofah network) for planting grass and fixing soil.The texture is loose and flexible,leaving 90% space for filling soil, gravel and fine stones.The root system of the plant can pass through geomat and grow in a neat and balanced way.The grown turf firmly combines the net mat, turf and soil surfaces. As the plant root system can penetrate 30-40cm below the surface, a solid green composite protective layer is formed.

- Before the grass' growing up, it can protect the land surface from wind erosion.
- It can keep seed uniform and firm on the slope casting surface from the wind and rain rushing away.Black nets mat can absorb a lot of heat, increase humidity, promote seed germination,and extend the plant growth.
- The rough surface keeps the wind, water flow in the nets mat surface,and then produces countless eddy current,to weaken generating function.
- Plants grow up and form compound protection layer.the layer can withstand high water level, the flow velocity flushing.
- It can replace concrete, asphalt, stone as permanent slope protection materials,and used for highway, railway, river,dams,hillside slope protection, etc.

## SPECIFICATIONS OF 3D GEOMAT

### Standard Type (Slope Angle $\leq 45^{\circ}$ )

Item and Type	EM2	EM3	EM4	EM5
Unit Weight $\geq$ (g/m <sup>2</sup> )	220	260	350	430
Thickness $\geq$ (mm)	10	12	14	16
Tensile Strength $\geq$ (kN/m)	0.8	1.4	2	3.2
Length(m)	30 or 50			
Width(m)	2			

### High Tensile Strength Type(Slope Angl $45^{\circ}$ - $90^{\circ}$ )

Item and Type	QEM3	QEM4	QEM5
Tensile Strength $\geq$ (kN/m)	6-9	9-12	15-20
Elongation $\leq$ %	10	10	10



## PROJECTS CASE OF 3D Geomat



[River and dam slope protection in South Africa]



[Mountain slope protection in Egypt]

## 3D Geomat CONSTRUCTION

Construction method of geogrid :

- First, level the slope. After the three-dimensional geonet is laid on the slope, it will form a flat surface. Therefore, the slope must be leveled before laying. When tamped, the mesh mat and soil can be integrated and tightly combined.
- Secondly, dig a trench 20 cm wide, 30 cm deep and 30 cm outside the foot of the slope at the top of the slope for burial. The absence of a 3D geonet makes it more firmly bonded to the slope.
- Third, the three-dimensional public network is flat, tightly laid on the slope, and fixed with U-shaped iron wires.



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