

GEOTEXTILE SOLUTIONS FOR EFFECTIVE CONSTRUCTION AND EROSION CONTROL

GeoTextile

Geotextiles are man-made permeable materials that are common in civil engineering and road infrastructure to enhance service life, durability and structural performance. Geotextiles are intended to serve various purposes in a soil-structure system, and are typically used in railway formations and road construction, embankments and in the retaining structure, and foundation works.



Key Functions

- Separation of soil layers
- Filtration of water flow
- Subsurface drainage
- Soil reinforcement
- Load distribution
- Erosion control

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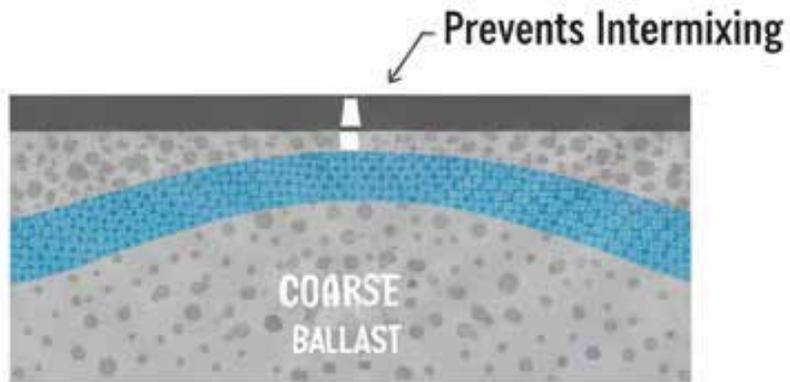
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RELIABLE GEOTEXTILE SYSTEMS FOR MODERN INFRASTRUCTURE PROJECTS

Separation

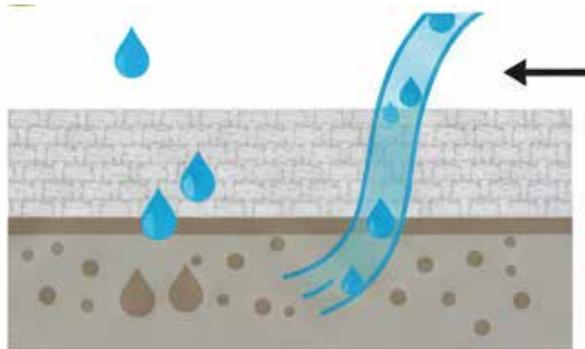
Geotextile placed between subgrade soils and the layers of granulations will ensure that the fine soil particles are not mixed with the ballast or base materials. This supports the set design thickness, gradation, and mechanical characteristics of every structural layer in a cyclic and dynamic load.



MAINTAINS LAYER INTEGRITY

Filteration

The pore structures are engineered to control the water flow and retain the soil particles. This will stop clogging, reduce movement of fines and ensure drainage efficiency reduces subgrade weakening and pumping.



ALLOWS WATER FLOW, RETAINS SOIL

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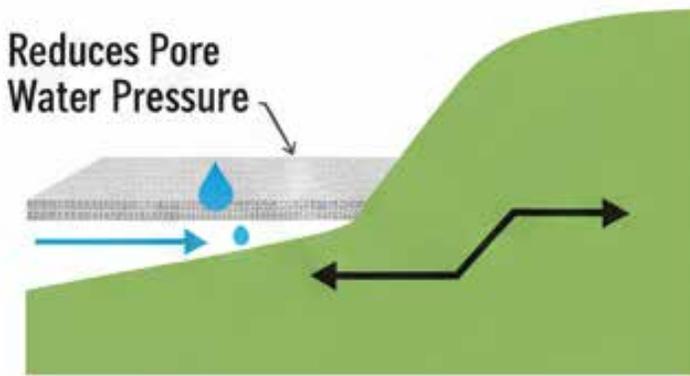




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Drainage

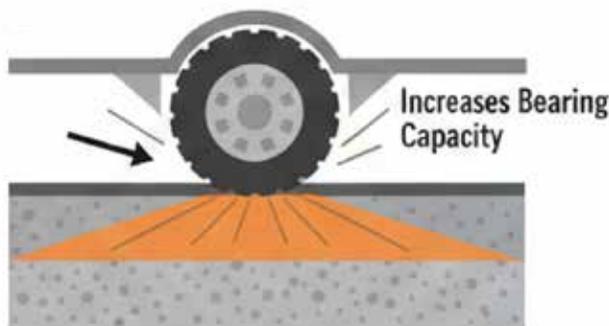
Geotextiles promote high water flow in the soil system, which lowers the pressure of water in the pores of soil and eliminates water stagnation as well as minimizes deformation due to saturation of subgrades



COLLECTS & TRANSPORTS WATER

Reinforcement:

Geotextiles enhance bearing capacity by decreasing stress concentrations, redistribution of applied loads throughout a broader zone, and enhancing resistance to differential settlement with heavy and cyclic loads



DISTRIBUTES LOADS, ENHANCES STRENGTH

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GABION CLADDING SPECIFICATIONS

Width(mm)	Height(meters)	Wire Dia(mm)	Mesh Size(mm)
150	1	4	100x50
200	2	4	100x50
250	3	4	50x50
250	3.5	5	50x50
300	4	5	50x50

Geotextiles are made of tough polymeric fibers that are designed to resist mechanical forces, wear, and tear, environmental factors, and chemical reaction with the soil. These key performance parameters include tensile strength, elongation, permeability, apparent opening size, and resistance to degradation; these are the most important parameters on which they are selected. The standard produced products are usually made according to the accepted international standards like ASTM and EN standards to maintain the same quality and performance.

TECHNICAL SPECIFICATIONS

Property	Specifications
Product Form	Supplied in rolls
Maximum Roll Width	Up to 6.0 m
Maximum Roll Length	Up to 200 m
Mass per Unit Area	140 g/m ² to 2000 g/m ²
Thickness (under pressure)	≥ 1.1 mm to > 10 mm
UV Resistance	≥ 70% retained strength after 500 hours
Compliance	Applicable ASTM / EN standards

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ENGINEERING BENEFITS

- **Structural stability and support:** The better the structural stability and support, the better it is in terms of load distribution and reinforcing the soil layers, which makes the infrastructure systems less susceptible to settlement and enhances their overall stability.
- **High drainage performance:** Enables controlled water flow through the building and eliminates soil erosion, lowers pore pressure and water-associated destruction
- **Reduction in maintenance and lifecycle costs:** The frequency of repairs and maintenance are reduced thereby minimizing the long-term operational and replacement costs
- **Long infrastructure life span:** Increases the stability and stability to external forces and improves the long-term functioning of infrastructure in extreme site conditions
- **Stability and strength at high loads:** Is supportive of stable stability and strength at heavy loads, and at traffic and conditions of repetitive heavy loading



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WHY CHOOSE OUR GEOTEXTILES

Our geotextile products are designed to work in the harsh site environment in Saudi Arabia and provide stability in the long run, efficient drainage management, and structural integrity of civil and road projects. Our products have a high standard of quality and performance as supplied by Hitech Gabion, a reputable and topmost supplier in the Kingdom. We also do compliant, consistent material provision with technical support so that the correct selection and application can be made.

- Appropriate in rough climate, unpredictable soils and overloading.
- In compliance with relevant ASTM / EN requirements.
- Uniform quality and batch traceability and documentation.
- Consultant and contractor assistance.

Contact Hitech Gabion to choose the appropriate geotextile to use in your project.

WHY CHOOSE OUR GEOTEXTILES

- Construction of railways tracks and stabilization of ballast.
- Highway and roads base and sub-base.
- Earthen and soil stabilization works.
- Out of place support systems: retaining wall and slope support systems.
- Drainage layers and erosion control

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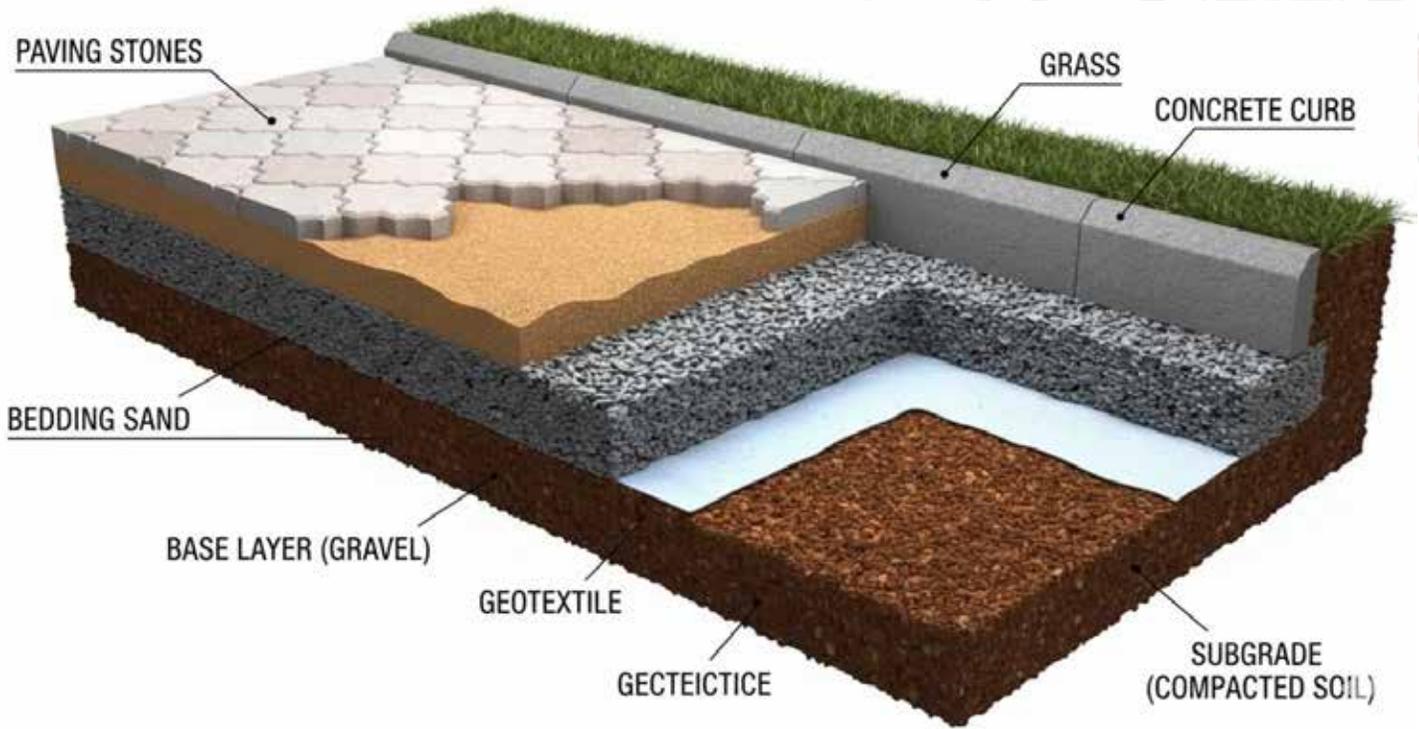


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TYPES OF GEOTEXTILES

There are several varieties of geotextiles that can be used in accordance with the engineering functions and the conditions of the place. To attain the intended performance of civil and infrastructure projects, it is important to choose the right type.

Woven Geotextiles

Weaving of high strength, polymer yarns are then woven together to create a stable, load carrying fabric referred to as woven geotextiles. They are mainly applied in the reinforcement and load distribution to enhance the soil strength, settlement minimization and to carry heavy and dynamic loads in roads, railways and embankments



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Non-Woven Geotextiles

Non-woven geotextile can be manufactured when fibers are bonded together to form a permeable flexible fabric. They are used best in filtration, drainage, and separation where the water can flow at the same time holding the soil particles to stop clogging and to make the ground more stable in the long run.



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