Geotechnical engineering,
innovative solutions to

Retain Cross Protect Strengthen

GEOQUEST

Geoquest Hong Kong
geoquest_group
Geoquest Group

www.geoquest-group.com.hk/

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GEOQUEST

Geosynthetics

Solutions for soil reinforcement,
environmental protection and drainage

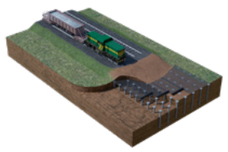
Geoquest delivers geosynthetics such as geogrids, geotextiles, geocells, erosion control mats, and drainage solutions, designed to meet specific project needs in civil engineering and infrastructure. Our solutions offer durability, safety, and cost-efficiency, providing sustainable alternatives for soil reinforcement, environmental protection, and drainage.

/ ArmaLynk

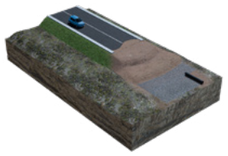
ArmaLynk are high strength uniaxial (up to 1800 kN/m) or biaxial geogrids for soil reinforcement, manufactured from high tenacity polyester yarns, encased in polyethylene sheath, and welded together with cross strips to generate a strong geogrid structure. They are used for various basal reinforcement applications like embankment on soft soils or on rigid inclusions, void bridging and challenging ground stabilization for roads, bridges, railways, working platforms, and heavy-duty pavements. The use of ArmaLynk in projects generally leads to significant reduction of the carbon footprint compared to traditional solutions.

Benefits

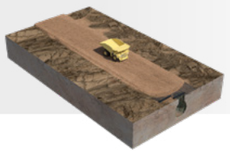
- Lower environmental impact by reducing excavation, waste removal, and chemical soil treatments
- Reduced carbon footprint thanks to faster installation and limited use of heavy equipment
- Durable, long-lasting solution that minimizes maintenance and resource consumption
- Low-disturbance installation procedure, ideal for sensitive environment or constrained sites



Weak and very soft soils



Rigid inclusions



Void bridging

Our solutions offer several advantages when compared to traditional methods such as soil replacement, chemical stabilization, grout injection, and other ground improvement techniques. These conventional engineering approaches are typically more costly to implement due to requiring careful construction staging, long execution time, increased fill material consumption and use of specialized equipment.

/ Fields of application

- Airports
- Railways
- Industry
- Mining
- Military
- Roads & Motorways
- Energy
- Commercial & Logistics
- Functional Facilities

/ ArmaGrid

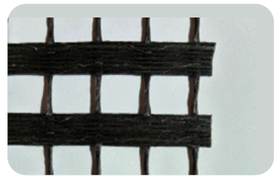
ArmaGrid geogrids are engineered to deliver reliable soil reinforcement and stabilization across a wide range of civil engineering applications. The excellent durability of the solution makes it ideal for long-term applications on challenging environments.

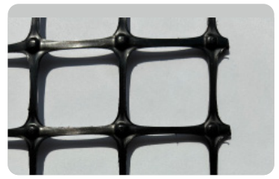
Manufactured from polyester (PET), high-density polyethylene (HDPE), polypropylene (PP) or Glass Fiber, ArmaGrid geogrids are available in both uniaxial and biaxial configurations to suit specific engineering needs. Their open grid structure ensures optimal interaction with soil, improving load distribution and reducing differential settlement.

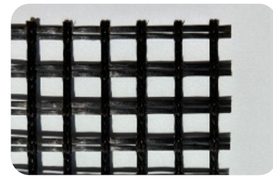
ArmaGrid geogrids are widely used in transport infrastructures and mining. Due to their chemical resistance and ease of installation, they offer a cost-effective and sustainable solution. Whether you are building on soft soils or reinforcing steep slopes, ArmaGrid provides strength and stability to your project demands.

Benefits

- Reducing fill material requirement in pavement layers
- Extending lifespan of the project
- Fast installation and cost effective solution
- Low maintenance needs and environmental impact







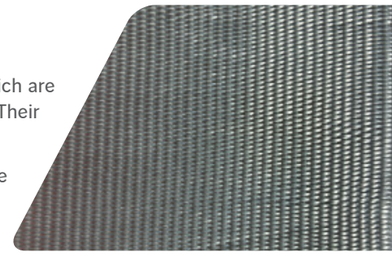
/ ArmaWeb

ArmaWeb geocells have a three-dimensional, honeycomb-like structure. They are made from high-density polyethylene (HDPE). When filled with soil, aggregate, or other materials, geocells provide confinement and stabilization in pavements and erosion control on steep slopes.

/ ArmaForce

ArmaForce woven geotextiles are composed of high-tenacity multifilament polyester yarns, which are woven into a dimensionally stable construction such that the yarns retain their relative positions. Their main functions are reinforcement, confinement, stabilization.

ArmaForce non-woven geotextiles, manufactured from PET or PP, are needle-punched to provide excellent strength and hydraulic characteristics necessary for filtration, separation, protection, ground stabilization, drainage, and erosion control applications.

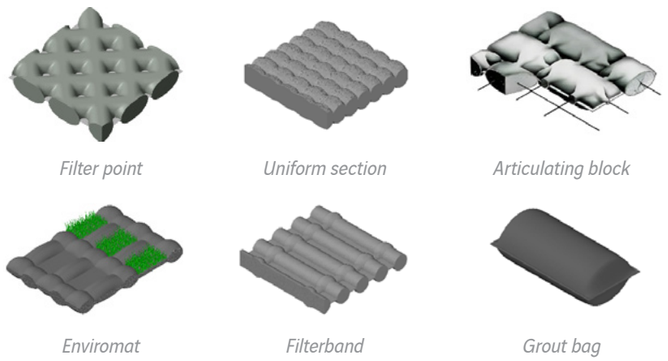


/ Fields of application

- Airports
- Railways
- Industry
- Mining
- Military
- Roads & Motorways
- Energy
- Commercial & Logistics
- Functional Facilities

Fabric-Formed Concrete Mattress

Fabric-Formed Concrete Mattresses (FFCMs) consist of fine aggregate concrete pumped between two layers of geosynthetic fabric at the project site. The resulting erosion control mattresses have the strength of traditional rock or precast concrete options, while also providing an easier, safer, customizable and affordable installation. FFCMs are pre-engineered or custom-made and are used for permanent erosion protection works. Depending upon project requirements, several types of fabric formwork are offered:



Benefits

- Suitable for dry and wet environments with rapid installation
- Reduces hydrostatic pressure, water velocity and wave run-up
- Allows vegetation growth with ecological and aesthetic benefits
- Multiple thicknesses, weights, and configurations
- Excellent tensile strength and puncture resistance
- Cost-effectiveness by reducing maintenance and repairs needs

This technology can also be installed under water to provide scour protection for bridge abutments and piers, flood banks, harbor quays, rivers and waterways.

Fields of application

- Airports
- Rivers & Waterways
- Ports & Harbours
- Mining
- Roads & Motorways
- Coastal
- Waste Management
- Water Management

TerraGreen

TerraGreen composite blankets, also referred to non-woven natural geotextile, are essentially made from natural coco fiber with one geosynthetic layer on one side or both sides of the mattress.

They are a custom designed erosion control mats useful for protecting dry and intermittently wet and erodible slopes.

TerraGreen blankets are an eco-friendly organic solution for erosion protection by promoting vegetation growth. The lifespan of the solution under normal conditions is typically between 12 and 15 months.

They can be used as a stand-alone technique or in combination with other solutions like TerraNail or TerraAnchor. They are often used to mitigate low to medium grade surface erosion, preventing potential surficial soil slips and slides.

TerraGreen blankets prompt vegetation growth in the following areas:

- Embankment slope surface protection in railroads and highways.
- Surface protection for mine dumps.
- Hill slope surface protection to mitigate surficial land slippages.

Benefits

- Eco-friendly and sustainable
- Acceleration of vegetation growth, improving slope aesthetics and stability
- Reduction of surface erosion and maintenance of slopes
- Prevents shallow soil slips
- Customizable based on site conditions
- Can be used standalone or with reinforcement solution

Fields of application

- Railways
- Roads & Motorways
- Mining
- Waste Management

Draintube™

Draintube™ is a solution engineered for specific flow rates and filtration characteristics, ensuring compatibility with a wide range of soil types and hydraulic conditions. Draintube™ contributes to more sustainable, cost-effective infrastructure, environmental and geotechnical projects. Draintube™ replaces traditional aggregate with its modular customizable design. The solution is suitable for a wide range of applications within four configurations:

- Multilinear drainage geocomposite
- Geonets
- Dimpled membranes
- Three-dimensional PP monofilament

Benefits

- Customized design flexibility tailored to project needs
- Superior drainage performance even under high loads and mild slopes
- Enhanced environmental protection through rapid leachate evacuation and gas control
- Space & cost saving replacing bulky aggregate drainage structures
- Suitable for vertical and horizontal applications

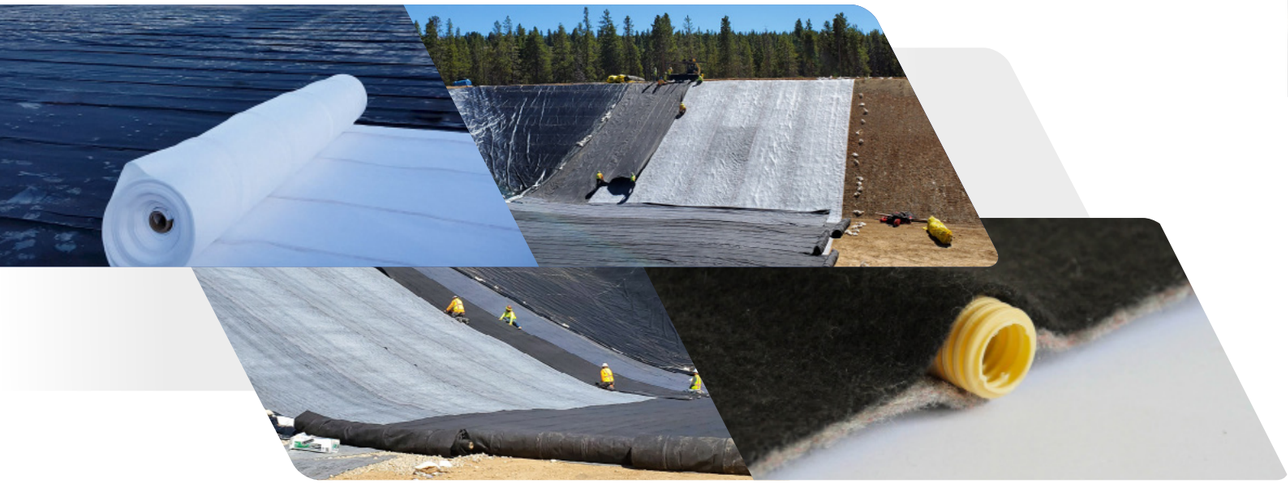
Geonets

Geonets consist of a polymeric core structure, made of high-density polyethylene (HDPE). They are often combined, on one or both sides, with PP or PET non-woven geotextile to form drainage geocomposite.

- Bi-planar geonet is designed with two HDPE strands crossing each other at a constant angle to form a diamond structure to provide better planar waterflow under high loading.
- Tri-planar geonet consists of three HDPE strands to improve the lateral drainage and transmissivity.

Multilinear drainage geocomposite

Multilinear drainage geocomposite has unique benefits over other solutions; such as no geotextile intrusion, no creep and no peel adhesion issue.
Multilinear geocomposite with drainage conduits, perforated mini-pipes regularly spaced between two geotextiles, performs the functions of separation, filtration and drainage. These ensure long term performance in most difficult conditions.



Dimpled membranes

Dimpled membrane has a three-dimensional cuspated design made from durable high-density polyethylene (HDPE).

The raised dimples create air gaps or drainage channels. Often combined with a PET or PP geotextile fabric that filters out soil and debris, ensuring drainage channels remain unclogged. The dimpled structure directs water laterally through void spaces forming a flow channel, preventing water buildup against surfaces like retaining walls, basements, or foundations.

Three-dimensional PP monofilament

Three-dimensional drainage geocomposite is made from stiff, high strength three-dimensional matrix of entangled extruded monofilament polypropylene (PP) strands bonded between layers of PET or PP non-woven geotextiles.

Fields of application

Roads & Motorways · Railways · Sports & Leisure · Energy · Mining · Waste Management

Fields of application

Roads & Motorways · Railways · Sports & Leisure · Energy · Mining · Waste Management

References

Maheshkali, Bangladesh

Penang, Malaysia

Mine project, Australia

Costa verde, Peru

Ganga river, India

Lumut Balai, Indonesia

Doho airport, Indonesia

Wetland park Hai Phong, Vietnam

Want to discover more?

Check our website by scanning this QR code

Innovation enhanced by experience

Geoquest combines 60 years of expertise in the field of soil-structure interaction and engineering backfills, with continuous innovation to deliver, across various applications, efficient solutions that are resilient and durable, quick to install, cost effective and sustainable

Geoquest teams around the world work to develop ideas aiming at being more efficient, meeting new needs and solving new challenges. Geoquest has developed around 100 major inventions, which are covered by patents registered worldwide.

Geoquest delivers solutions for a wide variety of structures across different sectors:

Transport infrastructure | Hydraulic infrastructure | Waste management

Urban development | Resources and industry | Military

From Reinforced Earth to corrugated steel, passing through precast, geosynthetics and geohazards, Geoquest supports your projects with expertise for operational excellence.

Discover our solutions for your projects:

is now

GEOQUEST

Full-cycle project expertise, **from design to installation**

Since 1963, Geoquest brings unmatched experience in soil-structure interaction, geotechnical engineering, and infrastructure design. Our teams combine decades of accumulated knowledge with advanced engineering expertise to deliver reliable, durable, and cost-effective solutions across a wide range of project types—from the simplest to the most exceptional.

One integrated partner

Engineering

We provide high-level engineering capabilities covering feasibility studies, detailed design, and optimization for complex projects and challenging terrains. Our teams bring decades of experience in soil-structure interaction, seismic design, hydrological constraints, and difficult geotechnical conditions. This expertise enables us to deliver safe, durable, and cost-efficient solutions for both standard and exceptional structures.

Integrated materials supply

We deliver an integrated supply of materials, combining our own manufactured products with selected partner sourced products to ensure consistent quality and reliable delivery. Our portfolio covers reinforcements, facings, precast elements, geosynthetics, drainage and erosion control solutions, and other specialized solutions tailored to each project. This integrated distribution model guarantees full compatibility between design and materials.

On-site services

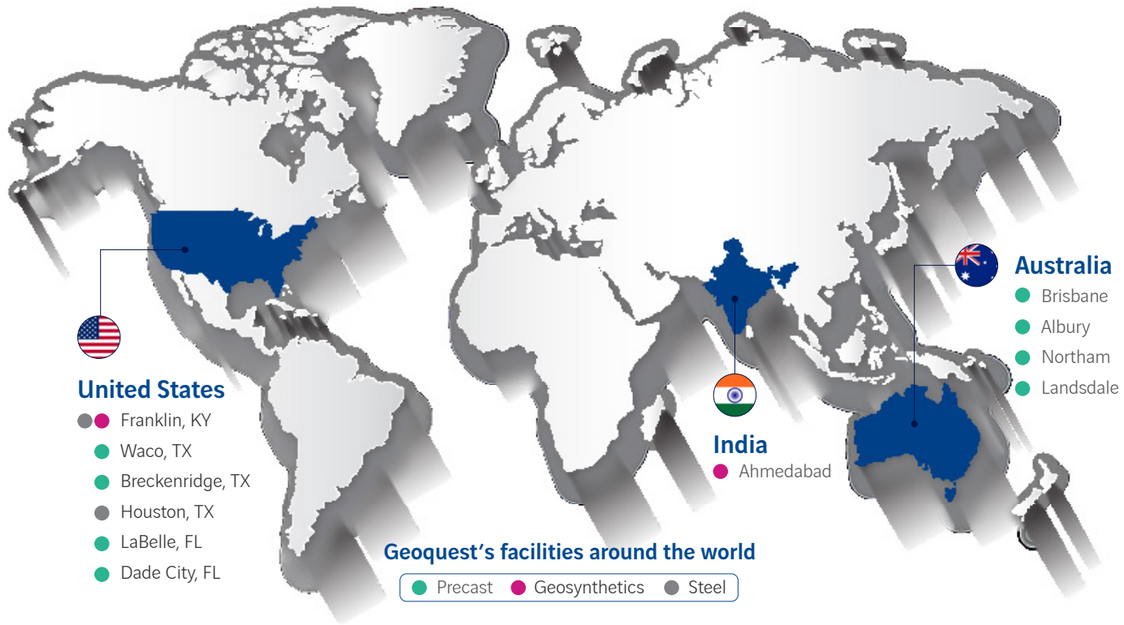
We support contractors throughout installation with training, technical assistance, field expertise, and we can also carry out installation with our own teams when and where applicable. Our specialists ensure that structures are built in full compliance with stringent design and quality standards, bearing safe constructability in mind. This close integration between design, materials, and installation strengthens performance and reduces project risks.

100,000
projects designed

80+
Mn m² structures built worldwide

An **integrated industrial model** that **strengthens our solutions**

Our industrial capabilities ensure that every Geoquest solution is engineered, produced, and delivered with the same level of excellence that has defined our company for more than 60 years. This integrated model ensures our clients a single accountable partner, certified materials, and a secure supply chain from concept to completion.

Integrated production, clear benefits

- **Enhanced safety** and reduced on site risks
- **Consistent, certified quality** through controlled factory environments
- **Resilient and responsive** supply chain
- A **single accountable partner** from design to supply
- **Customer centric service** throughout the project lifecycle