



OCEAN GLOBAL™

GEOCELLS

Engineered cellular solutions
for sustainable infrastructure

BUILDING
SUSTAINABLE
INFRASTRUCTURE
THROUGH
INNOVATION

sales@oceangeosynthetics.com



About Us

Who We Are

Founded in 1998 and headquartered in New Delhi, Ocean Global is a leading provider of eco-conscious engineering and advanced geosynthetic solutions. We specialize in tackling soil-related challenges with innovation, durable and sustainable products.

What We Do

With over two decades of experience, we deliver advanced geosynthetic solutions backed by strong manufacturing, seamless service and the latest technology.

Our Vision and Mission

We aim to build smarter and greener infrastructure for a cleaner tomorrow—offering reliable, tailored solutions that exceed expectations.

What We Offer

We have dedicated units to handle production and quality control, We also pride ourselves on having an exclusive research and development wing.



Certifications & Compliance

- ISO 9001: 2015
- ASTM & BIS
- Standard Testing
- In-house QA/QC Labs



Facilities

Manufacturing Plant:
Jhajjar, Haryana, India
(strategic proximity
to Delhi)

Warehouse: Mundka,
New Delhi, India

Sectors We Serve

Ocean Global products are deployed across the most demanding industries. From government infrastructure to environmental engineering, our geosynthetics ensure safety, stability and sustainability for critical projects worldwide. Trusted by industry leaders and public agencies alike, our solutions deliver long-term performance and protection in every sector we serve.



Roads & Highways

Separation, filtration and reinforcement systems



Environmental Protection

Land rehabilitation, erosion control



Railways

Subgrade stabilization, slope protection, drainage layers



Ports & Aviation

Ground improvement, spill containment



Waste Management

Landfill liners, waste water treatment, leachate barriers



Urban Infrastructure

Waterproofing, landscaping



Hydro & Irrigation

Reservoir linings, gabion retaining structure, dewatering tubes



Defence & Border Roads

Reinforced access, mountain engineering



Agriculture

Pond lining, biofloc system, water storage tank



Oil & Gas

Drill sumps, containment berms, oil & gas storage tanks



Ground Engineering & Tunneling

Slope protection & landslide prevention, waterproofing, basal reinforcement



Power & Mining

Dust suppression lining, erosion protection



What Are Geocells

Geocells are advanced three-dimensional confinement systems designed to enhance the strength and performance of soil and aggregate materials. By limiting lateral movement and evenly distributing applied loads, Geocells transform weak subgrades into stable, durable and load-bearing platforms for various civil engineering applications.

Engineered from high-density polyethylene (HDPE), these structures offer outstanding flexibility, strength and long-term resistance to environmental degradation—making them indispensable for modern infrastructure development.

Core Engineering Functions of Geocell



Load Distribution

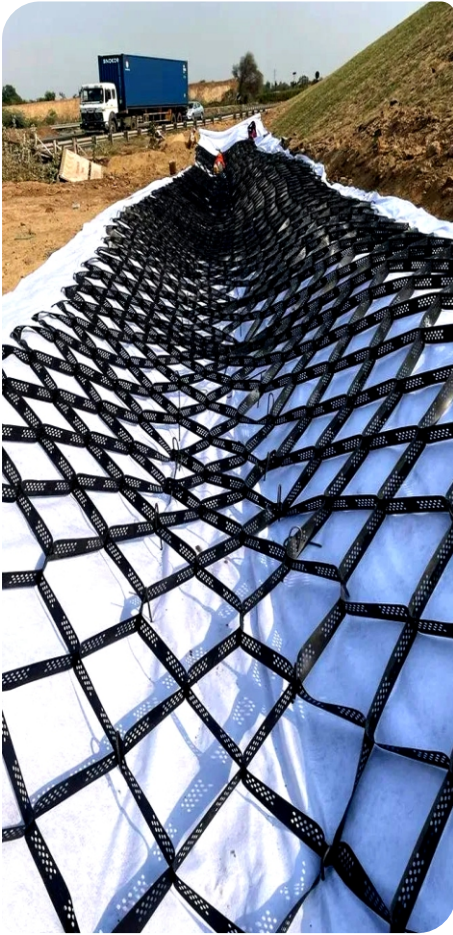
Geocells effectively disperse vertical loads over a wider area, reducing stress on subgrades and preventing differential settlement in roadways, railways and embankments.

Applications: Road base reinforcement, railway sub-ballast support, container yards, parking lots

Lateral Confinement

The interconnected honeycomb structure confines infill materials, preventing lateral movement and maintaining compaction. This ensures long-term structural integrity even under cyclic or dynamic loading.

Applications: Slope stabilization, embankment reinforcement, retaining wall facings, load transfer platforms



Erosion Control

Geocells act as a flexible confinement system that anchors soil particles and prevents surface erosion caused by water flow, rainfall or wind. When filled with soil and seeded, they create stable, green and eco-friendly surfaces.

Applications: Hillside protection, channel lining, riverbank protection, vegetated embankments

Reinforcement

Serving as a tensile element within the soil matrix, Geocells improve shear strength and distribute stresses efficiently, transforming weak ground into a stable foundation for heavy structures.

Applications: Retaining walls, foundation reinforcement, slope restoration, embankment bases



Drainage and Permeability

Perforated Geocells facilitate natural water movement, minimizing pore-water pressure and reducing soil weakening during saturation or rainfall. They maintain slope stability and subgrade strength in wet environments.

Applications: Stormwater channels, drainage layers beneath pavements, landfill caps, reservoir embankments

Durability and Longevity

Manufactured from UV-stabilized high-density polyethylene, Geocells offer exceptional resistance to chemicals, temperature variation and environmental stress cracking, ensuring decades of reliable performance.

Applications: Coastal protection works, desert road projects, industrial flooring, long-term slope stabilization

Ocean Geocells

Ocean Geocells are engineered for superior ground stability, load distribution and erosion resistance. Manufactured from high-quality HDPE and welded with precision under ASTM standards, they deliver consistent strength and long-term durability. The perforated and textured walls enhance soil confinement and natural drainage, ensuring reliable performance even in challenging conditions. Chosen by engineers for their versatility, sustainability and easy installation, Ocean Geocells provide a dependable solution for modern infrastructure and environmental protection projects.

Technical Specifications of Ocean Geocells

MATERIAL PROPERTIES	UNIT	TEST METHOD	TYPICAL VALUE
POLYMER DENSITY	G/CM ³	ASTM D1505	0.935 - 0.965
ENVIRONMENTAL STRESS CRACK RESISTANCE	HRS	ASTM D1693	> 5000
CARBON BLACK CONTENT	%	ASTM D1603	≥ 2.0
NOMINAL SHEET THICKNESS (POST TEXTURING)	MM	ASTM D5199	≥ 1.52

SELECTION PROPERTIES		OG/GC-330	OG/GC-356	OG/GC-445	OG/GC-660	OG/GC-712
WELD SPACING (±3%)	MM	330	356	445	660	712
CELL DEPTH (±2%)	MM	75 / 100 / 125 / 150 / 200 / 250 / 300				
EXPANDED CELL DIMENSIONS (±3%)	MM	224 x 210	259 x 224	320 x 287	488 x 436	508 x 475
EXPANDED CELL AREA (±3%)	CM ²	250	289	460	1000	1206
NOMINAL EXPANDED SECTION (±3%)	M	2.44 x 6.10	2.59 x 6.50	3.20 x 8.35	4.88 x 12.63	5.08 x 13.72
NOMINAL EXPANDED SECTION AREA (±3%)	M ²	14.9	16.82	22.4	31.8	35.1

The above values are derived from tests conducted in our in-house laboratory under strict compliance with ASTM standards. Ocean Geocells are manufactured and evaluated following standardized procedures to ensure consistency and reliability. The given data represents typical average values and may vary within normal manufacturing tolerances. Ocean Global reserves the right to modify or update this information without prior notice. While the data presented is believed to be accurate and true to the best of our knowledge, no expressed or implied warranties are made. Ocean Global assumes no responsibility for the use or performance of this information. All dimensional and performance properties carry a tolerance of ±7%, except where otherwise specified.



INSTALLATION GUIDELINES

Proper installation is essential for achieving the full performance of Geocells. Each step from subgrade preparation to anchoring, filling and compaction, should follow site-specific engineering standards. Using the correct tools and accessories ensures faster deployment, precise alignment and long-lasting stability. Ocean Geocells are designed for easy handling and can be installed efficiently in roads, slopes, channels and retaining structures with minimal equipment and skilled supervision.

1. Subgrade Preparation

Prepare the site according to the engineer's specifications. The subgrade should be levelled, compacted and free from debris, vegetation or soft spots. If required, lay a geotextile separator to prevent mixing of subgrade soil and infill material.

2. Panel Expansion and Placement

Unfold and expand Ocean Geocell panels to the required dimensions. Align the panels properly according to site geometry. Panels can be pre-connected for faster coverage on large areas. Use galvanized staples, ties or approved connectors to join adjacent panels securely.

3. Anchoring and Positioning

Secure the expanded panels in place using steel J-pins or rebar anchors, typically spaced at intervals depending on slope angle and site conditions. For slope installations, place at least one row of cells inside the anchor trench and stake alternately for firm positioning. Anchors can be removed and reused after infilling.

4. Infill Placement

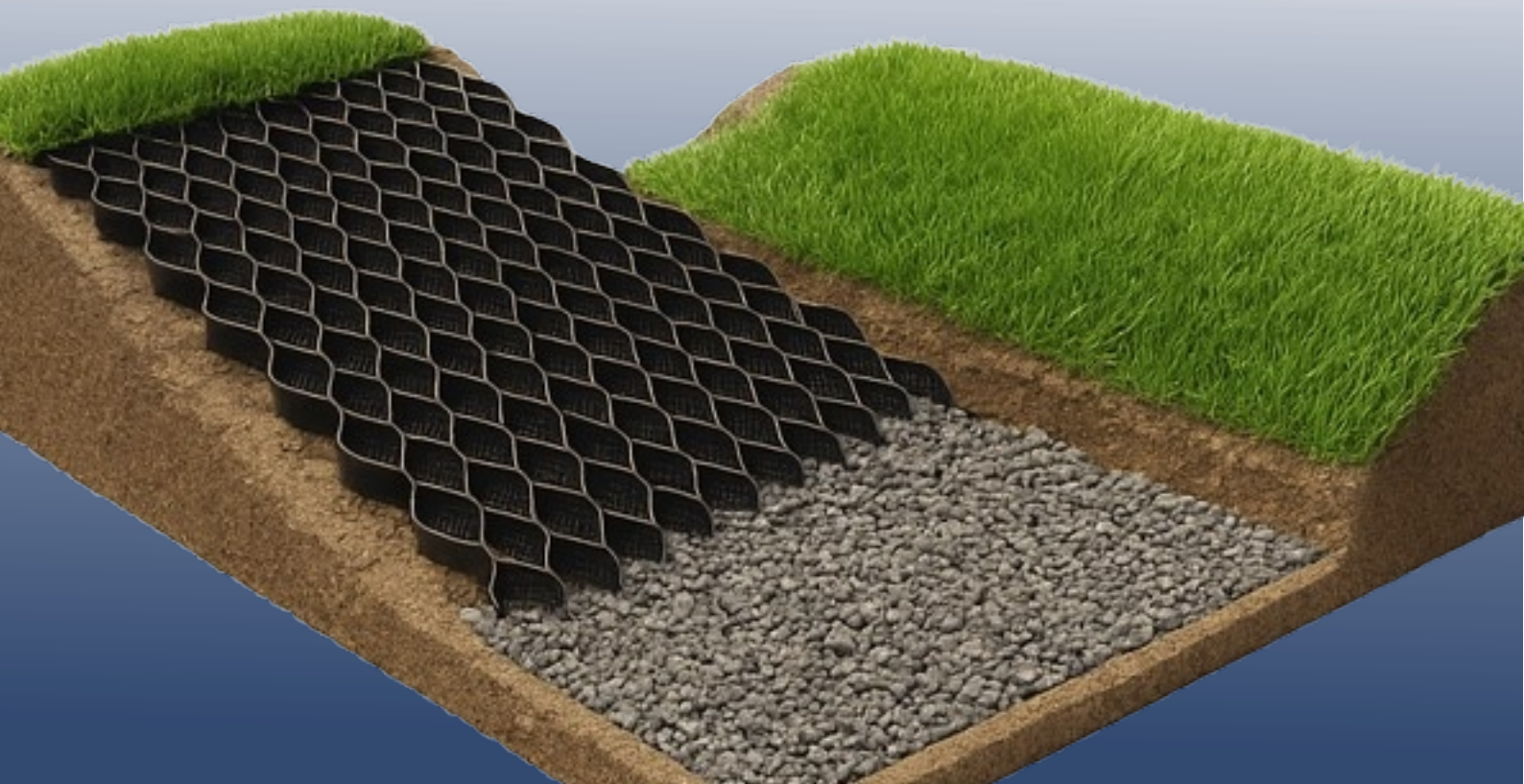
Fill the expanded cells with approved material such as crushed aggregate, granular soil or concrete, depending on the application. Avoid dropping material from heights greater than 1 meter. For optimal performance, ensure even distribution without displacing the panels. Overfill the cells by 25–50 mm before compaction.

5. Compaction and Finishing

Compact the filled Geocells using a vibratory roller or plate compactor until the surface is uniform and stable. For vegetated applications, seed or turf the top layer after compaction. When used under pavements, ensure proper surface finishing before overlaying with the next construction layer.

6. Slope, Channel and Retaining Wall Applications

Compact the filled Geocells using a vibratory roller or plate compactor until the surface is uniform and stable. For vegetated applications, seed or turf the top layer after compaction. When used under pavements, ensure proper surface finishing before overlaying with the next construction layer.



Essential Equipment for Efficient and Safe Ocean Geocell Installation

- **Steel J-Hooks / J-Pins**

Galvanized steel pins used to anchor geocell panels to the subgrade or slope surface. Recommended at intervals of three times the cell depth during expansion and slope anchoring.

- **Rebar Anchors & U-Stakes**

Provide strong fixation in areas exposed to high wind or water flow, essential for slope and channel protection applications.

- **Tendons and Twist Anchors**

Used on steep slopes or channels to increase tensile strength and structural stability of the geocell system.

- **Cable Ties / Galvanized Staples**

Join adjacent panels to maintain alignment and prevent displacement during infilling and compaction.

- **Hammer Drill**

Assist in driving anchors or pins into compact or rocky ground efficiently.

- **Loader / Skid Steer**

Distributes infill material uniformly over expanded geocells without disturbing their shape.

- **Geotextile / Geogrid Separator**

Acts as a base layer to prevent soil mixing and improve subgrade stability in base and road projects.

- **Safety Gear (Gloves, Helmets, Jackets)**

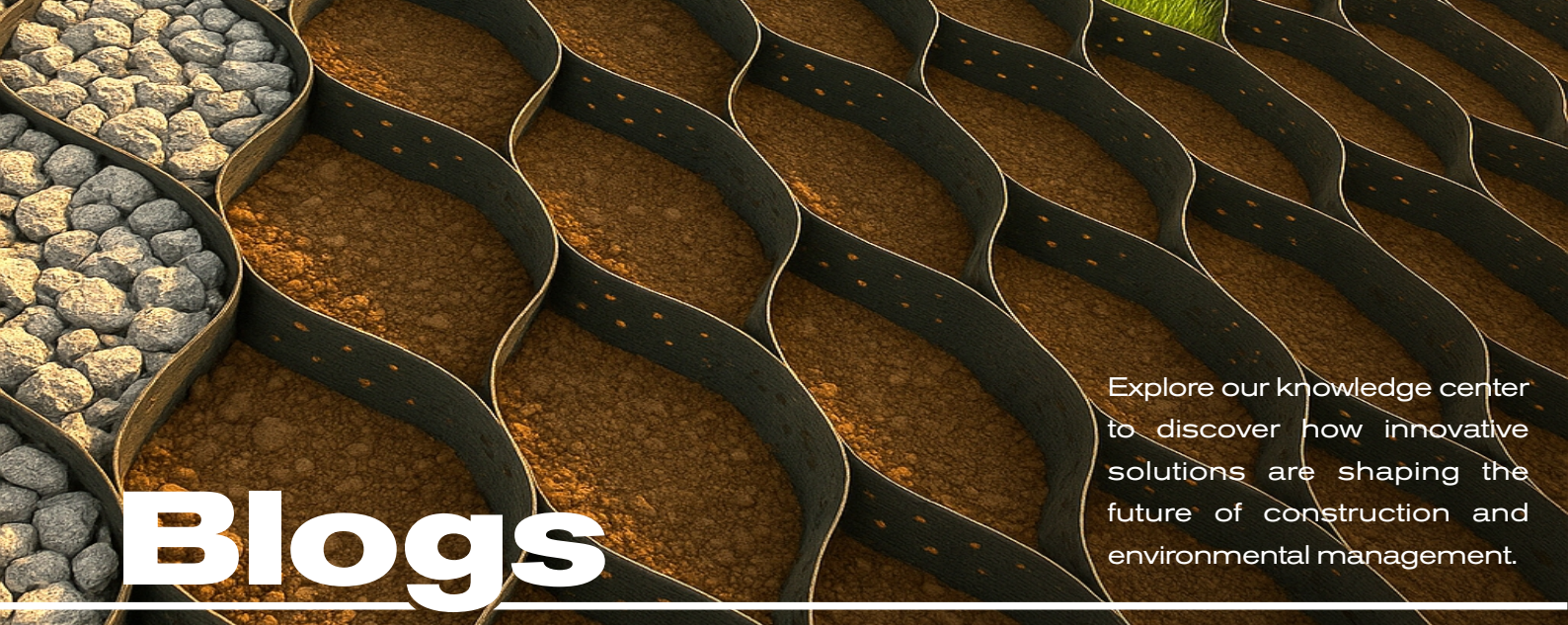
Protects workers during anchoring, filling and compaction operations.



Esteemed Clientele

Ocean Global is proud to be the trusted partner of leading organizations across infrastructure, engineering and environmental sectors. Our geosynthetic solutions are relied upon by industry leaders and government agencies for critical projects throughout India and internationally.





Explore our knowledge center to discover how innovative solutions are shaping the future of construction and environmental management.

Blogs

Geocell Manufacturers and Suppliers

The Ocean Global is the top geosynthetic materials producer and manufacturer in India. Geotextile, geogrid, geocells, geomembranes, geocomposite and geonet are among the geosynthetics produced in India.

Their geocell panels are three-dimensional expanding panels made from high-density polyethylene (HDPE), polyester or another polymer. The connecting strips serve as the walls of a flexible, three-dimensional cellular structure into which specific filler materials are placed and compressed during installation. This creates a free-draining system that maintains infill materials in place and prevents bulk movement by constraining them with tensile reinforcement.

Read more:

<https://oceangeosynthetics.com/geocell-manufacturers/#geocell-manufacturers-and-suppliers>

Best Geocell Sellers in North East India

Ocean Global is India's leading producer and manufacturer of geosynthetic materials. Among the geosynthetics manufactured in Arunachal Pradesh, Assam, Manipur, Meghalaya, Mizoram, Nagaland, Sikkim and Tripura are geotextile, geogrid, geocells, geomembranes, geocomposite and geonet.

Their geocell panels are three-dimensional expanding panels made of polymers such as high-density polyethylene (HDPE), polyester and others. During installation, the connecting strips act as the walls of a flexible, three-dimensional cellular structure into which specific filler materials are placed and compressed.

Read more:

<https://oceangeosynthetics.com/best-geocell-sellers-in-north-east-india/>

How does Geocell Technology Help us in Soil Stabilization?

Soil stabilization entails any physical, chemical, biological or blend method of altering a natural soil to meet an engineering purpose. In expanding as well as developed nations, soil stabilization is chosen as the best method to construct entire roads.

Geocell technology is a visionary 3D honeycomb Cellular Confinement System particularly designed for soil stabilization and assists to prevent geohazards(s). Geocells are vastly utilized in civil engineering and infrastructure regions. They are suppressed by high-density polyethylene (HDPE) or polymer structures and aid in enhancing the performance of erosion control treatments and standard manufacturing materials.

Read more:

<https://oceangeosynthetics.com/how-does-geocell-technology-help-us-in-soil-stabilization/>

Build Green, Build Smart: Eco-friendly Solutions for Contractors and Builders!

In today's rapidly evolving construction industry, there is an increasing focus on environmentally friendly and sustainable practices. Engineers, contractors and builders are constantly seeking innovative solutions that meet project requirements and minimize their ecological footprint. Ocean Global, a leading manufacturer and exporter of geocells provides the ideal solution for these conscientious professionals. Let's explore how Ocean Non Wovens eco-friendly solutions can revolutionize your construction projects and pave the way for a greener future.

Read more:

<https://oceangeosynthetics.com/build-green-build-smart-eco-friendly-solutions-for-contractors-and-builders/>



CASE STUDY

Agartala, Tripura (LHP Project)

Unlocking Sustainable Infrastructure with Ocean Non Wovens HDPE Perforated Geocell

Ocean Non Wovens, a pioneering force in geosynthetics manufacturing, spearheaded a groundbreaking project in Agartala, Tripura – the LHP Project. This initiative showcased the transformative potential of Ocean Non Wovens' HDPE Perforated Geocell, weighing 150gsm, as a sustainable and efficient solution for civil engineering and environmental protection.

Challenges

Agartala, with its unique geographical and environmental characteristics, presented challenges for traditional construction methods. The LHP Project required a solution that could address:

- **Soil Erosion:** The region faced significant soil erosion issues due to its topography and climate.
- **Infrastructure Stability:** Ensuring the stability of infrastructure in challenging terrains while maintaining environmental sustainability.

Solution

Ocean Non Wovens' HDPE Perforated Geocell emerged as the ideal solution for the LHP Project, offering a combination of strength, flexibility and environmental sensitivity. The key features of the solution included:

- **Strength and Durability:** The 150gsm HDPE Perforated Geocell provided robust support, distributing loads effectively and preventing soil displacement.
- **Perforation for Water Management:** The perforated design facilitated efficient water drainage, reducing the risk of water accumulation and soil erosion.
- **Environmental Compatibility:** Manufactured with a commitment to sustainability, the HDPE Geocell aligned with Ocean Non Wovens' dedication to eco-friendly solutions.

Implementation

The implementation strategy for the LHP Project involved seamless integration of Ocean Non Wovens' HDPE Perforated Geocell into the construction process:

- **Collaborative Planning:** Collaborating with project engineers and stakeholders to customize the application of HDPE Geocell for the unique needs of the Agartala terrain.
- **Installation Expertise:** Ocean Non Wovens provided on-site support and training to ensure the correct installation of HDPE Perforated Geocell, optimizing its effectiveness.
- **Monitoring and Evaluation:** Continuous monitoring and evaluation throughout the project ensured that the geocell solution performed as expected, meeting or exceeding project requirements.

Outcomes

The implementation of Ocean Non Wovens' HDPE Perforated Geocell in the LHP Project yielded remarkable outcomes:

- **Soil Erosion Mitigation:** The geocell effectively prevented soil erosion, preserving the integrity of the project site.
- **Infrastructure Stability:** Enhanced load distribution and support resulted in increased stability and durability of the constructed infrastructure.
- **Environmental Impact:** The project showcased a commitment to sustainable practices, aligning with Ocean Non Wovens' mission for environmentally conscious solutions.

Conclusion

The LHP Project in Agartala, Tripura, stands as a testament to the innovation and effectiveness of Ocean Non Wovens' HDPE Perforated Geocell. By addressing the unique challenges of the Agartala region, this project not only achieved its engineering objectives but also contributed to environmental sustainability. Ocean Non Wovens continues to lead the way in providing cutting-edge geosynthetic solutions, setting new standards for excellence in the industry.



Our Projects

A closer look at our geobags solutions in action.



Geocells for slope protection for NHAI project.

Project 2



Geocells for slope embankment for a railway project.



Other Product Lines

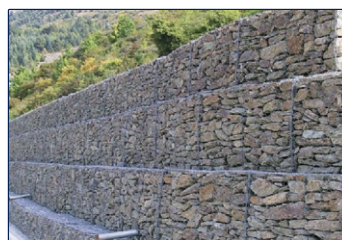
Discover more geosynthetic solutions from Ocean Global.



Geomembranes



Geotextiles



Gabion Boxes



Geogrid



Geocomposite Materials



Geobags



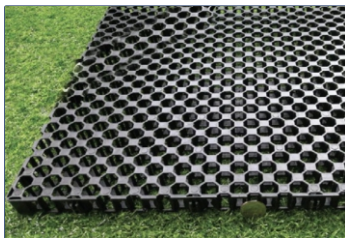
Erosion Control Mats



Geopipes



Rockfall Protection Barriers



Drainage Cells



Dimple Drain Boards



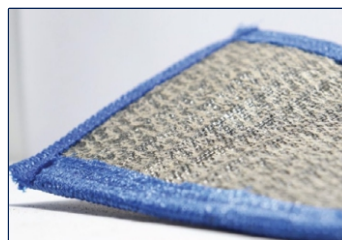
Anti - Hail Netting



Geotubes



GCCM



GCL

Let's Connect

Reach out to our team for expert advice, product solutions or to discuss your next project. Whether you need product samples, technical advice or a full-scale design and delivery solution, we are committed to supporting your project's success at every stage.

PHONE

011 45120291
+91 8447226007
+91 9811107978

EMAIL

sales@oceangeosynthetics.com

WEB

www.oceangeosynthetics.com



Follow us



Corporate Office

RR-24, 3rd Floor, Mianwali Nagar, Main Rohtak Road, Peeragarhi,
New Delhi - 110087, India



Warehouse

Plot No. 1 & 2, Bhagya Vihar, Rani Khara Road, Near Mundka
Metro Station, New Delhi - 110081, India



Manufacturing Plant

45 Km Stone, Delhi-Rohtak Road, Jhajjar, Bahadurgarh,
Haryana - 124507, India