

Composite Drainage Geonet (PicoDrain Geonet™)

(1) Product Definition



HDPE Extrusion Craft

Manufactured from premium high-density polyethylene (HDPE) using advanced extrusion molding technology, it creates a resilient three-dimensional geocomposite matrix that ensures exceptional structural integrity and chemical resistance.



Tri-Layer Drainage Core

Boasting a unique three-layer architecture, it merges a high-strength central core with enhanced flow capacity. This design delivers superior structural stability, enabling rapid vertical water collection and efficient horizontal drainage.



Engineering Resilience

Engineered for demanding civil engineering environments, it effectively controls subsurface water accumulation, mitigates hydrostatic pressure, and enhances the long-term performance and sustainability of infrastructure systems.

PicoDrain Geonet™ — A durable, high-performance solution redefining subsurface water management standards.

(2) How It Works

- 1 Composite Drainage Structure Formation**
A 3D network creates interconnected voids for rapid water passage, forming a stable, permeable core that eliminates waterlogging at the source.
- 2 Water Collection and Filtration**
Efficiently captures surface and subsurface water; the porous matrix filters fine sediments to prevent clogging and sustain permeability.
- 3 Horizontal Water Discharge**
Uniform horizontal flow design redirects excess moisture away from foundations and soil profiles, preventing structural erosion and damage.
- 4 Long-Term Drainage Protection**
Resists deformation and biological fouling, ensuring consistent performance for decades even in high-load or chemically aggressive soil.

(3) Key Benefits

-  **High Drainage Capacity**
Exceptional void ratio handles heavy rainfall and surges, preventing system backup.
-  **50+ Year Lifespan**
Engineered for decades of low-maintenance, reliable performance.
-  **High Compression Resistance**
Maintains integrity under heavy loads (traffic/construction) without collapse.
-  **Lightweight & Fast Install**
Light panels reduce labor needs, cutting installation time by 50%.
-  **Excellent Tensile Strength**
Withstands soil movement and settlement, resisting cracks in dynamic ground.
-  **Versatile Applications**
Perfect for roads, railways, landfills, landscaping, and building foundations.
-  **Chemical & Corrosion Resistant**
Inert to acids, alkalis, and saltwater—ideal for harsh coastal/industrial sites.

(4) Applications



01. Landfill Drainage Systems

Engineer high-efficiency leachate collection networks to prevent pollution spread. Ensures landfill structural stability while adhering to strict environmental and safety standards for waste containment.



02. Tunnel & Underground Structures

Customized anti-seepage solutions for complex hydrogeology. Effectively mitigates groundwater pressure to ensure construction safety, prevent water ingress, and extend structural service life.



03. Highway & Railway Engineering

Solves subgrade settlement and erosion issues. Optimizes drainage layers to enhance load-bearing capacity, ensuring transportation infrastructure resilience against weather and usage stress.



04. Municipal Engineering

Integrates urban water supply/drainage and sponge city initiatives. Optimizes water circulation to boost flood control, reduce urban waterlogging, and improve the ecological living environment.



05. Reservoir & Slope Protection

Builds stable drainage and reinforcement systems for embankments. Prevents reservoir leakage and landslides, safeguarding water resource security and maintaining ecological balance.



06. Environmental Engineering

Focuses on soil/groundwater remediation and ecological restoration. Uses cutting-edge anti-seepage barriers and purification technologies to rehabilitate contaminated sites for sustainable use.