

# Drainage Composite (PicoDrain Composite™)

## (1) Product Definition



### Integrated Prefabricated System

A high-performance composite integrating a corrugated polypropylene (PP) core between two nonwoven geotextile layers. Merges filtration and drainage into a single, lightweight prefabricated structure for immediate deployment.



### Directional Hydraulic Efficiency

Continuous flow channels formed by the waved core enable controlled, high-efficiency water collection and transmission. Geotextile layers act as a barrier to prevent soil particle intrusion, ensuring unobstructed long-term performance.



### Broad Civil & Geotechnical Use

Engineered for diverse civil engineering applications including retaining walls, landfill liners, sub-base drainage, and transportation infrastructure. A versatile solution for both temporary and permanent geotechnical projects.



### Advantage Over Traditional Methods

Outperforms conventional multi-layer systems with faster installation, reduced labor costs, and consistent hydraulic conductivity under structural loads. Lightweight design minimizes transportation and on-site handling efforts.

## (2) How It Works

### 1 Water Collection

Captures surface runoff via gravity-fed inlets, designed to eliminate standing water and target flow hotspots across the installation area.

### 2 Filtration Process

Multi-layered porous media traps sediments, debris, and pollutants down to 500 microns, purifying water before it enters the drainage system.

### 3 Directional Flow Control

Internal baffles optimize flow velocity, preventing channeling and ensuring uniform water distribution for maximum filtration efficiency.

### 4 Optimized Discharge

Filtered water is either safely discharged to municipal systems or diverted for irrigation, toilet flushing, or other non-potable reuse.

## (3) Key Benefits



### High Drainage Efficiency

30% faster water removal than traditional systems, mitigating urban flooding risks in heavy downpours.



### Integrated Filtration

Eliminates external pre-treatment units, saving 40% on installation footprint and complexity.



### High Load Resistance

Class A load rating supports heavy HGV traffic and industrial use without structural deformation.



### Cost Efficiency

Reduces lifecycle costs by 25% through low maintenance needs and extended service life.



### Rapid Installation

Modular plug-and-play design allows deployment in hours, cutting project timelines significantly.



### Long-Term Durability

UV-stabilized, corrosion-resistant materials ensure 20+ years of reliable performance in harsh climates.



### Versatile Applications

Ideal for urban landscapes, highways, airports, commercial parking, and green infrastructure projects.

### Eco-Friendly Impact

Contributes to LEED certification by improving water quality and supporting sustainable urban development goals.

(4) Applications



01. Tunnels

Stabilizes soil and prevents water seepage in underground excavations and linings.



02. Landfills

Creates chemical-resistant barriers to contain hazardous waste and protect groundwater.



03. Roads & Railways

Reinforces weak subgrades, distributes load evenly, and extends pavement life.



04. Retaining Walls

Enhances structural integrity and erosion control for soil-retaining structures.



05. Green Roofs

Root barrier and drainage layer for sustainable, eco-friendly roofing systems.



06. Sports Fields

Ensures rapid drainage, turf stability, and consistent all-weather play.

(5) Technical Specifications

| Model | Thick (mm) | Width (m) | Wt (kg/m <sup>2</sup> ) | Disp. (m <sup>3</sup> /s) | Package (L×W) |
|-------|------------|-----------|-------------------------|---------------------------|---------------|
| DC-10 | 1.0        | 2.0       | 1.2                     | 0.08                      | 50m × 2m      |
| DC-15 | 1.5        | 2.0       | 1.8                     | 0.06                      | 40m × 2m      |
| DC-20 | 2.0        | 2.0       | 2.4                     | 0.04                      | 30m × 2m      |
| DC-30 | 3.0        | 2.0       | 3.6                     | 0.02                      | 20m × 2m      |

\* All products comply with ISO 10318 standards for geosynthetic materials, ensuring optimal performance in civil engineering applications.