

Waved Drainage Geocomposite (PicoWaveDrain™)

01 Product Definition



Integrated Composite Build

Constructed with a corrugated polypropylene (PP) waved core encased between dual layers of needle-punched nonwoven geotextile. This monolithic design merges filtration, soil separation, and directional drainage into a single, robust engineered material.



Optimized Hydraulic Flow

The waved core creates continuous longitudinal channels for efficient water movement under vertical and horizontal pressure. Geotextile layers act as a barrier against soil particle intrusion, preventing clogging and ensuring long-term, unimpeded drainage performance.



Superior Load & Efficiency

Outperforms flat-core alternatives with enhanced hydraulic conductivity and structural stability under heavy compressive loads. The unique geometry minimizes flow disruption, making it ideal for high-stress civil engineering applications.

CORE VALUE: A pre-engineered solution for reliable, low-maintenance subsurface water management in infrastructure and environmental projects.

Pico Lab

(2) How It Works

1 Filtration

Advanced mesh screening removes debris and particulates, preventing clogging and ensuring unobstructed, clean inflow into the core system.

2 Collection

Ergonomically shaped basins gather and consolidate dispersed water flow, optimizing hydraulic pressure and efficiency at the intake point.

3 Directional Flow

Precision-engineered internal channels guide water movement, eliminating turbulence and maintaining a smooth, laminar flow path throughout.

4 Discharge

A calibrated outlet design ensures controlled and efficient water release, reducing backpressure and maintaining system equilibrium under variable loads.

(3) Key Benefits

High Hydraulic Efficiency

Maximizes water transfer rates with minimal energy loss, ideal for high-demand and large-volume applications.

Improved Flow Stability

Reduces surging and vortex formation, ensuring steady operation across fluctuating water levels and pressures.

Integrated Filtration

Eliminates the need for separate pre-filtration units, saving valuable installation space and upfront equipment costs.

Directional Drainage

Customizable flow paths adapt to site-specific topography, enhancing precision and preventing localized pooling.

High Load Resistance

Robust structural design withstands heavy external pressures, vehicle traffic, and extreme environmental conditions.

Cost Efficiency

Low maintenance requirements and reduced energy consumption lead to significant operational savings over time.

Easy Installation

Modular components and simplified assembly reduce on-site labor time and construction complexity.

Long-Term Durability

Corrosion-resistant materials and premium engineering ensure a prolonged service life with minimal repairs.

(4) Applications



01. Tunnels

Stabilizes tunnel walls and prevents water ingress, ensuring structural integrity in underground construction.



02. Retaining Structures

Reinforces soil to support gravity walls and steep slopes, minimizing erosion risks in civil engineering.



03. Sports Fields

Delivers superior drainage and base stability for natural or synthetic turf, ideal for high-use arenas.



04. Landfills

Creates impermeable barriers to contain toxic leachate, safeguarding groundwater from contamination.



05. Roads & Railways

Boosts subgrade load capacity and reduces settlement, critical for heavy-traffic infrastructure durability.



06. Green Roofs

Optimizes water retention and drainage, supporting vegetation growth while protecting building membranes.

(5) Technical Specifications

Model	Network Core Thickness (mm)
WD35	3.5 ± 0.3
WD45	4.5 ± 0.3
WD55	5.5 ± 0.3
WD65	6.5 ± 0.3
WD75	7.5 ± 0.3
WD85	8.5 ± 0.3