Pico Lab

Polyester PET Geogrid（PicoGrid PET™）

01. Premium Raw Material

Crafted from high-tenacity polyester industrial filaments, which provide exceptional tensile strength and modulus, serving as the robust foundation for the grid structure.

02. Warp-Knitted Structure

Directly woven via precision warp-knitting technology to form a stable grid grey cloth, ensuring uniform aperture, strong node integrity, and excellent dimensional stability under stress.

03. Protective Coating

Specialized polymer coating treatment enhances resistance to UV radiation, chemical corrosion, and biological degradation, significantly extending the service life in harsh environments.

Core Definition Summary: PicoGrid PET™ is a high-performance geosynthetic material engineered by warp-knitting high-strength polyester filaments into a stable grid structure and then applying a durable polymer coating. This advanced manufacturing process ensures superior tensile strength, low creep deformation, and outstanding environmental adaptability, making it a premium solution for soil reinforcement, road stabilization, and civil engineering projects.

How It Works and Key Benefits

(2) How it works

1 Load Transfer into Reinforced Soil

Efficiently distributes tensile loads from the soil mass to reinforcement layers, forming a composite system that enhances bearing capacity and mitigates stress concentrations.

2 High Tensile Reinforcement

Utilizes high-strength geosynthetic materials to counteract soil tensile stresses, preventing failure and reinforcing embankments against heavy traffic and environmental loads.

3 Soil Confinement and Interaction

Reinforcements interlock with soil particles, restricting lateral movement and enhancing shear strength through friction, creating a stable, unified structural mass.

4 Creep Resistance Mechanism

Engineered to withstand long-term deformation under sustained loads, maintaining structural integrity and performance over the project’ s entire lifecycle.

(3) Key Benefits

01. Long-Term Stability
Resists seismic activity and environmental shifts, ensuring permanent earth structure integrity for decades.

02. High Creep Resistance
Minimizes slow deformation under constant load, critical for precision alignment in rail and highway projects.

03. Enhanced Embankments
Strengthens weak subgrades, enabling steeper slopes and reducing costly fill material requirements.

04. Reduced Deformation
Limits vertical/lateral movement to protect adjacent structures and infrastructure from damage.

05. Cost Efficiency
Cuts excavation/fill costs by optimizing material usage and reducing overall construction time.

06. Construction Speed
Lightweight materials simplify installation, accelerating project delivery and on-site efficiency.

“Engineered for unmatched durability while optimizing resource use and sustainability.”

(4) Applications

Embankments on Soft Ground
Stabilizes weak subgrades for roads/railways, significantly reducing settlement risks and ensuring long-term stability.

Slope Stabilization
Mitigates landslide risks on natural or cut slopes, critical for hilly terrain and erosion control projects.

MSE Retaining Structures
Reinforces modular block walls for highways and urban developments, enhancing lateral load resistance efficiently.

Infrastructure Foundations
Boosts bearing capacity for industrial buildings, pipelines, and heavy utility installations on poor soils.

Bridge Abutments
Distributes heavy vertical/horizontal bridge loads, providing a stable transition between superstructure and ground.

Land Reclamation
Supports large-scale fill placement over soft marine/clay soils, enabling coastal and urban expansion safely.

(5) Technical Specifications

Model	Ductility (%)	L-Strength (kN/m)	C-Strength (kN/m)	Grid (mm)	Breadth (m)
PG20-20	12-15	20	15	20×20	1.0
PG30-30	12-15	30	22	30×30	1.0
PG40-40	12-15	40	30	40×40	1.0
PG50-50	12-15	50	38	50×50	1.0
PG80-80	12-15	80	60	80×80	1.0
PG100-100	12-15	100	75	100×100	1.0
PG120-120	12-15	120	90	120×120	1.0