

Uniaxial Plastic Geogrid (PicoGrid U™)

01 / PRODUCT DEFINITION

PicoGrid U™ is a high-performance geosynthetic reinforcement manufactured from HDPE or PP resins. Through advanced extrusion, precision punching, and unidirectional stretching processes, it forms an open grid structure with elongated apertures. This aligns the polymer molecular chains in a single direction, creating exceptional tensile strength along the primary axis—making it ideal for applications where loads act predominantly in one direction.



High-Strength Axis

Available in grades from 30 to 110 kN/m. The unidirectional stretching process maximizes tensile modulus, ensuring minimal creep and deformation under sustained loads.



Targeted Geotech Use

Optimized for Mechanically Stabilized Earth (MSE) walls, steep slope stabilization, bridge abutments, and embankment reinforcement where lateral forces are dominant.



Efficiency & Economy

Reduces the need for excessive fill materials, lowers construction costs, and enhances long-term structural stability by distributing loads effectively across the soil mass.

(2) How It Works

1 Load Transfer

Efficiently distributes structural loads across the soil profile, mitigating localized stress points and preventing differential settlement in foundations and embankments.

2 One-Directional Tensile Strength

Delivers superior tensile resistance along the reinforcement axis, effectively counteracting soil tensile forces and enhancing slope stability against erosion.

3 Soil Interlock & Confinement

Creates a mechanical bond between geogrid and soil particles, increasing shear strength and providing lateral confinement to prevent soil lateral movement.

4 Improved Stability

Boosts overall geotechnical stability by increasing bearing capacity, making it suitable for critical applications like retaining walls and soft ground improvement.

(3) Key Benefits



Performance

Exceptional load-bearing capacity and deformation resistance ensure structural integrity under extreme conditions.



Durability

Resistant to UV degradation, chemicals, and biological corrosion for a long service life.



Efficiency

Accelerates construction with fast, low-cost installation and minimal site preparation needs.



Cost Saving

Reduces aggregate usage and labor expenses, optimizing project budgets significantly.



Reliability

Consistent mechanical properties ensure predictable and safe performance in diverse soils.



Sustainability

Eco-friendly production and reduced carbon footprint align with green building standards.



Versatility

Adaptable for roads, railways, retaining walls, and coastal engineering projects.

(4) Application



MSE Retaining Walls

Provides robust lateral soil support for mechanically stabilized earth systems, ideal for highway and railway embankments.



Steep Slope Stabilization

Enhances soil shear strength on inclines, mitigating erosion and landslide risks in challenging terrains.



Embankment Construction

Strengthens soft subgrades for roadways and railways, reducing total construction height and material costs.



Bridge Abutments

Reinforces foundation soils to withstand vertical/horizontal loads, preventing settlement and ensuring structural integrity.



Infrastructure Foundations

Tensile reinforcement for shallow/deep foundations in ports, industrial zones, and high-rise construction.



Green & Landscape Walls

Integrates structural support with ecological design, enabling sustainable vertical greenery in urban environments.

(5) Technical Specifications

Model	Depth (m)	Yield (kN/m)	Elongation	2% Force (kN/m)	5% Force (kN/m)
UG25	0.5	25	10%	18	22
UG35	0.6	35	10%	26	30
UG50	0.8	50	10%	38	44
UG80	1.0	80	10%	60	70
UG110	1.2	110	10%	82	95
UG150	1.5	150	10%	112	130
UG200	1.8	200	10%	150	175