

Steel-Plastic Composite Geogrid (PicoGrid SP™)

01 / PRODUCT DEFINITION



Core Structure & Material Superiority

A high-performance geosynthetic material that fuses high-tensile steel wire cores with a continuous polyethylene (PE) protective coating. This unique composite design delivers exceptional tensile strength, low elongation, and robust resistance to corrosion, chemical erosion, and environmental aging, ensuring long-term dimensional stability under extreme loading conditions.



Infrastructure & Engineering Applications

Optimized for heavy-duty soil reinforcement in critical projects such as embankments, retaining walls, soft ground stabilization, container yards, mining haul roads, and bridge approaches. Its low creep characteristics efficiently transfer loads to minimize deformation, making it the ideal choice for enhancing structural integrity in high-demand civil engineering.

"PicoGrid SP™ — The cornerstone for building resilient, long-lasting infrastructure in the most challenging environments."

02 How It Works

1

Composite Reinforcement Manufacturing

Precision-extruded polymer composites are woven into a high-tensile grid, ensuring bi-directional strength for optimal soil interaction and load distribution.

2

Grid Structure Formation

Interlocking apertures create a stable skeletal framework, forming a mechanical bond with soil particles and aggregates at multiple contact points.

3

Load Transfer & Stress Distribution

Concentrated loads are evenly spread across a wider area, reducing localized stress and preventing differential settlement in weak soil formations.

4

Long-Term Soil Stabilization

Creates a reinforced soil mass that resists creep, fatigue, and environmental degradation, ensuring lasting structural integrity for decades.

03 Key Benefits

High Tensile Reinforcement– Exceptional tensile strength resists soil pullout and deformation under heavy static and dynamic loading.

Superior Load Transfer– Efficiently distributes loads to lateral soil resistance, minimizing bearing pressure and enhancing stability.

Excellent Dimensional Stability– Minimal creep under sustained loads maintains grid geometry and performance over time.

Corrosion & Environmental Resistance– Chemically inert to soil acids/alkalis and UV-stabilized for durability in harsh climates.

Enhanced Foundation Stability– Mitigates differential settlement, ideal for soft soil subgrades and embankment reinforcement.

Long-Term Durability– Engineered for a service life exceeding 50 years, providing a permanent infrastructure solution.

Cost-Effective Improvement– Reduces the need for expensive excavation and imported fill, lowering overall project costs.

(4) Applications



Road and Highway Construction

Delivers robust subgrade stabilization with superior load-bearing capacity, resisting rutting and fatigue under heavy traffic volumes. Ensures long-lasting pavement integrity across diverse climatic conditions and soil types.



Railway Engineering

Constructs rigid, vibration-damped track beds that maintain precise alignment under heavy axle loads. Reduces long-term maintenance costs and enhances passenger comfort by minimizing track deformation and noise.



Bridge Abutments & Approach Roads

Eliminates critical differential settlement at bridge-to-road interfaces, preventing structural stress on foundations. Creates a seamless transition that preserves the integrity of both the bridge structure and the approach pavement.



Port & Coastal Engineering

Builds erosion-resistant, liquefaction-stable foundations for berths, breakwaters, and jetties. Withstands harsh marine environments, dynamic ship impacts, and cyclic wave loading to protect critical coastal infrastructure.



Dam & Hydraulic Structures

Creates impermeable, seepage-resistant bases that withstand extreme hydrostatic pressure. Prevents soil liquefaction in saturated zones, ensuring the structural safety and longevity of dams, reservoirs, and levees.



Waste Management & Industrial Sites

Stabilizes contaminated soils and reinforces containment structures for landfills. Provides load-bearing platforms for heavy industrial machinery and storage facilities, mitigating environmental risks and ensuring compliance.