
SYLVAGEO®

Geocell Ground Stabilization System

Advanced Cellular Confinement Technology
for Infrastructure & Environmental Engineering



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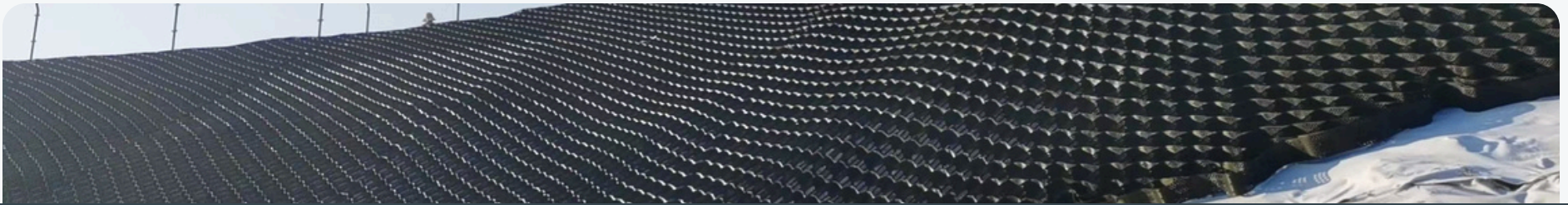
ABOUT SYLVAGEO®

SYLVAGEO® is a leading manufacturer of high-performance geocell confinement systems designed for ground stabilization, slope protection, and infrastructure reinforcement.

Our products are engineered using advanced HDPE and Novel Polymeric Alloy (NPA) materials, meeting international standards including ASTM D4355, ISO 13438, and EN 13252.

With over a decade of engineering expertise, we serve international infrastructure projects across road construction, railway embankments, river channel protection, and ecological slope stabilization.

Our systems are trusted by contractors, EPC firms, and government agencies in over 30 countries worldwide.



30+

Countries Served

500+

Projects Completed

15+

Years Experience

ISO 9001

Certified

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PRODUCT OVERVIEW

SYLVAGEO® Geocell is a three-dimensional cellular confinement system manufactured from high-density polyethylene (HDPE) strips, ultrasonically welded to form a honeycomb structure when expanded.

Key Features

- High tensile strength & creep resistance
- UV stabilized for long-term outdoor exposure
- Textured & perforated options available
- Lightweight, foldable for easy transport



| Material | Cell Depth | Weld Spacing | Strip Thickness | Tensile Strength |
|----------------|--------------|--------------|-----------------|------------------|
| HDPE / NPA | 75 - 200 mm | 330 - 660 mm | 1.1 - 1.5 mm | ≥ 23 kN/m |
| HDPE Textured | 100 - 150 mm | 356 mm | 1.27 mm | ≥ 25 kN/m |
| NPA Perforated | 150 - 200 mm | 660 mm | 1.5 mm | ≥ 30 kN/m |

Note: Custom dimensions and specifications available upon request.
All products comply with ASTM D4355, ISO 13438, and EN 13252 standards.

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APPLICATIONS



Road & Pavement

Load support for highways, access roads, parking areas, and heavy traffic zones.



Slope Protection

Erosion control for embankments, river banks, railway cuttings, and steep gradients.



Channel Lining

Stabilization of irrigation canals, drainage ditches, and flood control channels.



Retaining Walls

Gravity wall systems for earth retention, bridge abutments, and terraced structures.

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FEATURES & BENEFITS

- **High Tensile Strength**
Superior load distribution and structural integrity under heavy traffic loads.
- **Erosion Control**
Prevents soil displacement on slopes, channels, and embankments.
- **Eco-Friendly**
Supports vegetation growth while maintaining structural stability.
- **Cost Effective**
Reduces aggregate use by up to 50% compared to traditional methods.
- **UV Resistant**
Long-term durability with carbon black stabilized HDPE material.
- **Fast Installation**
Expandable panels reduce construction time by up to 60%.
- **Flexible Design**
Adapts to complex terrain and variable soil conditions.
- **Load Support**
Distributes concentrated loads across a wider soil area.

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TECHNICAL SPECIFICATIONS

| Property | Test Method | Unit | Value |
|-----------------------------------|-------------|-------------------|------------|
| Polymer Density | ASTM D1505 | g/cm ³ | ≥ 0.935 |
| Melt Flow Index | ASTM D1238 | g/10min | ≤ 1.0 |
| Tensile Strength at Yield | ASTM D6693 | kN/m | ≥ 23 |
| Seam Peel Strength | ISO 13426 | N | ≥ 1500 |
| Environmental Stress Crack | ASTM D5397 | hours | ≥ 3600 |
| Oxidative Induction Time | ASTM D3895 | minutes | ≥ 100 |
| UV Resistance (Retained Strength) | ASTM D4355 | % | ≥ 70 |
| Carbon Black Content | ASTM D4218 | % | 1.5 - 2.5 |
| Cell Depth Range | — | mm | 75 - 200 |
| Operating Temperature | — | °C | -40 to +60 |
| Strip Thickness | ISO 9863 | mm | 1.1 - 1.5 |
| Weld Spacing | — | mm | 330 - 660 |

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CASE STUDIES



CASE 01: Highway Embankment Stabilization

Location: Shandong Province, China

Year: 2019

Scope: 12,000 m² geocell slope protection

SYLVAGEO® geocell panels were deployed on a 45° highway embankment to prevent erosion and support vegetation growth. Construction time reduced by 55% vs. traditional concrete methods.



CASE 02: River Channel Protection

Location: Heilongjiang Province, China

Year: 2018

Scope: 8,500 m² channel lining

Geocell confinement system installed along flood-prone river banks. After 3 flood seasons, zero erosion damage recorded compared to 40% failure rate on untreated sections.



CASE 03: Ecological Slope Restoration

Location: Qinghai Province, China

Year: 2020

Scope: 15,000 m² mountain slope

Large-scale ecological restoration using perforated geocell with vegetation infill. 90% grass coverage achieved within one growing season, eliminating surface runoff.

SYLVAGEO®

Engineering Ground Stability for a Stronger Future

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ISO 9001 Certified | ASTM Compliant | CE Marked | 30+ Countries