

StrataWeb

StrataWeb (Geocell) is a strong, lightweight, three dimensional honeycomb-like cellular confinement system, which offers unique, eco-friendly geotechnical solutions for Civil Engineering challenges. StrataWeb is made of ultrasonically-welded HDPE strips that are expandable on-site to form a honeycomb-like structure. It provides solutions for load support, erosion control and earth retention projects, thereby leading to cost savings on the cost of select soil and its transportation while also rendering ecological advantages. It acts as a foundation reinforcement mat for improvement of bearing capacities of weak soils.



Highlights:

- 3D Structural Matrix manufactured using high UV resistant advanced polymer
- High Resistance to Tensile Stresses, Tearing, Punching and Fatigues
- Fast all weather installation
- Use of local/inferior/recycled infill
- Reduced consumption of natural material such as aggregates
- Sustainable consumption: lower carbon footprint
- Cost savings as compared to conventional roadbed material costs and transportation costs
- Reduces operations and maintenance costs
- Prevents erosion while promoting vegetation, provides strength and aesthetic looks

Strata Geosystems (India) Pvt. Ltd., established in 2004, is a joint venture with Strata Systems Inc., USA (part of the 130-year old Glen Raven group of companies). Strata provides end-to-end technical solutions, from design to execution for geotechnical applications such as reinforced soil walls (flyovers, road over bridges etc.), soil and embankment stabilisation, reinforced steep slopes, reinforced foundations, slope protection, load support for paved and unpaved roads and bearing capacity improvement, landfills and reservoirs. We are renowned for our quality, durability and cost effectiveness and manufacture conforming to strict international quality standards. Our committed team of experienced design engineers and project implementation specialists ensure timely and accurate installation.

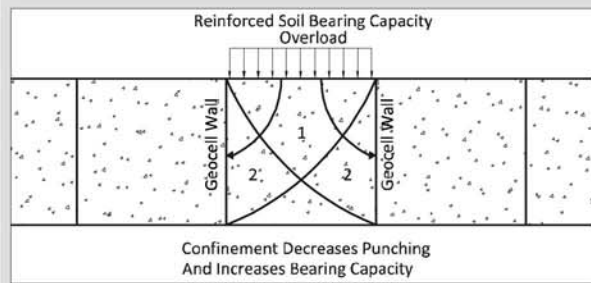
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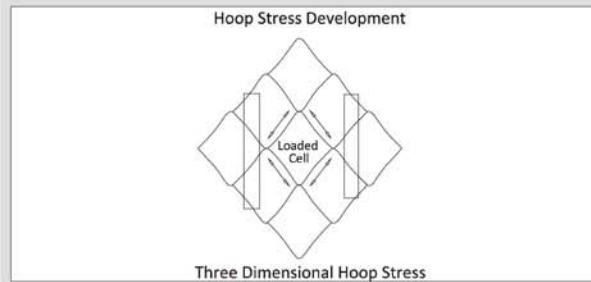


Technical details

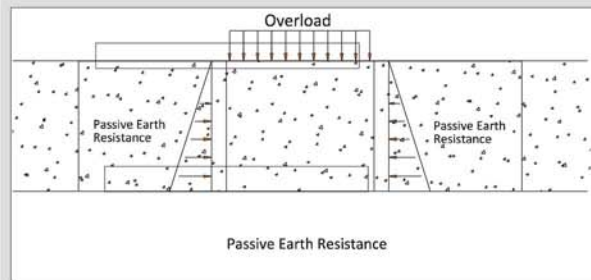
A 3-Dimensional Cellular Confinement System



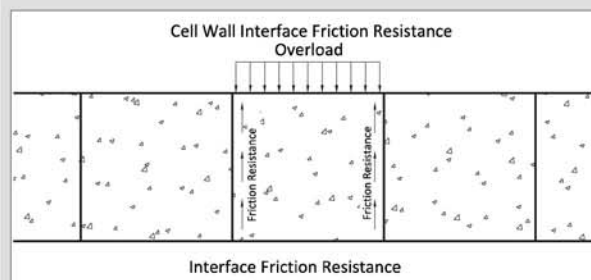
In the StrataWeb Geocell cellular confinement system, vertical loading on the confined infill results in high lateral stress and resistance on the stiff cell walls. These stresses increase the shear strength of the confined soil, thus creating a stiff mattress. The result is a decrease in punching, increase in bearing capacity and a lesser peak settlement (shown in figure alongside).



The three dimensional StrataWeb geocell structure confines the infill soil, limiting lateral deformation. Lateral expansion of the infill is restricted by high hoop strength (shown in figure alongside)



In addition to the confinement by the stiff cell walls, soil contained in adjacent cells provides an additional resistance against the loaded cells through passive resistance (shown in figure alongside).



The horizontal stresses applied on walls of the loaded cell increase the interface friction resistance (shown in figure alongside) between soil infill and the textured geocell walls. The increased vertical frictional resistance diminishes the stress reaching the lower strata.

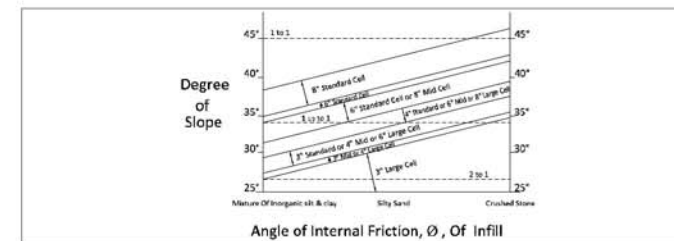
Technology and Industry Applications

- **Paved Highways and Unpaved Roads** - Paved National & State Highways, unpaved access roads, haul and service roads, structural pavement reinforcement and road rehabilitation, green shoulders, road widening
- **Railway infrastructure** - Sub-ballast confinement for new and maintenance of old tracks
- **Mining & Logging** - Haul roads, slope protection, earth retention, site rehabilitation
- **Gas, Oil & Energy** - access and service roads, pipeline and tank protection, tank pad foundations, wind farms, terminals and depots
- **Utilities & Telecommunications** - electrical, cellular and repeater stations, tower and pylon support
- **Ports & Shipping** - Roads on soft soil, access roads, container yards and platforms

Features

General	Load Support	Slope Protection
<p>Main Features</p> <ul style="list-style-type: none"> ● Fast and speedy installation ● All-weather installation ● Minimal labour involvement ● Reduces project time and costs ● Uses low quality, local or recycled infill <p>Sustainable Solution</p> <ul style="list-style-type: none"> ● Environmentally and economically sustainable ● Reduces carbon footprint ● Preserves Quarry resources 	<p>Cost effective</p> <ul style="list-style-type: none"> ● Increases subgrade strength by several factors ● Substantial increase in bearing capacity ● Reduces infill needs upto 50% ● Withstands heavy dynamic and cyclical road/rail traffic <p>Durability</p> <ul style="list-style-type: none"> ● Dimensionally Stable ● Has a design life of 50 years under static and cyclic loading 	<p>Most Effective Soil and Slope Protection System</p> <ul style="list-style-type: none"> ● Prevents soil erosion ● 3D cell-soil-plant interlock ● Vegetated or hard infill/surface <p>Superior Site Ecology</p> <ul style="list-style-type: none"> ● Perforations enable passage of water, nutrients and soil organisms ● Interlocking root growth stabilizes soil mass ● Enhances landscape restoration ● Gives natural aesthetics

How it works



Step 1: Design of the laying of StrataWeb



Step 2: Prepare the Site by smoothing & dressing the slopes & removing loose soils & boulders



Step 3: Install the StrataWeb section in the designated portion using necessary expansion and anchoring



Step 4: Connect the adjoining StrataWeb panels with cable ties. Anchor the StrataWeb geocells with polymer rope tendons and also with 'J'-shaped steel reinforcement bars.



Step 5: Infilling of StrataWeb geocells with necessary infill material



Step 6: Compaction and dressing of the finished slope surface



Step 7: StrataWeb geocell treated & finished slope surface