

PORTACell

Proven 3D Mechanical Soil Stabilization Technology

Paved & Unpaved Roads | Ports & Yards | Railways | Airports
Earth Retention System | Slope Protection & Channel Protection



WHAT IS PORTCELL RIGID?

PORTACell is a three-dimensional honeycomb cellular confinement of polymeric strips when filled with locally available granular material such as sand, recycled asphalt, etc. tends to improve the load-bearing capacity of the pavement.

This smart engineered innovation is made of **Novel Polymeric Alloys**, prevents the movement of infill and distributes loads over a wide area, thereby increasing the strength and stiffness of a pavement layer.

Owing to its unique properties, it enables better performance, unlike conventional HDPE geocells & most importantly **incurs savings** in terms of overall project cost, project completion time & requirement of expensive natural resources like aggregates.



WHY PORTACELL?

- It reduces long term maintenance and construction costs for roads and load support.
- It increases soil modulus and bearing capacity.
- It reduces the requirement of aggregates and quarry material, thus safeguarding the environment.
- It retains cell wall stiffness and compaction for project design-life and lifespan.
- It facilitates the usage of fly ash and other locally available material as infill for a sustainable solution.

APPLICATIONS



Paved and unpaved roads



Airports



Ports and Yards



Railways



Slope Protection



Retaining Wall

KEY ENGINEERING BENEFITS OF PORTACELL RIGID

Based on a novel polymeric alloy, the Geocell creates a stiff stabilized pavement structure. Unlike other Geocells, Portacell have the requisite properties conforming to various industry standards.



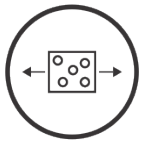
High Elastic Stiffness

- Long Term Pavement Stiffness
(DMA Test, ASTM E2254)



High Tensile Strength

- Supports Heavy Loads
(ISO 10319)



Low Permanent Deformation

- Durable For Entire Design Life
(SIM Test, ASTM D6992)



UV & Oxidation Resistant

- Environmental Durability
(HPOIT Tests, ASTM D5885)

END TO END CUSTOMIZED SUPPORT

3D Mechanical Soil Stabilization Experts provide comprehensive end-to-end solutions customized to your needs:

- Site Inspection
- Customized Solution & Design Support
- Installation & Training
- Industry Expert Support

KEY PROJECTS



Khairatunda to Barwa Adda Section NH-02, Dhanbad
Save upto 25% Asphalt thickness and 30% total pavement thickness



Vikravandi - Sethiyathopu (NH-45C) in State of Tamil Nadu
Replaced unreliable chemically stabilized sub-base layer



Large International Airport, Mexico
Stabilized pavements over extremely soft soil



Load transfer platform stabilization in Ports, Latin America
Use low quality infill to build durable pavements

EXPERTS SPEAK

“Conventional ground improvement techniques, such as surcharge induced preloading, sand columns, and PVD assisted preloading is not feasible to pre-consolidate the soft clay layer in the present study, mainly due to heavy and continuous traffic at the affected area. A hybrid ground improvement strategy involving the installation of stone columns penetrating through the clay layers, overlying a well-designed in-filled geocell reinforced soil layer, can be a viable option for the site, which can prevent further settlement of the pavement.” Quoted from analysis of ground distress along a busy highway – A case study by IIT Bombay published in International Society for Soil Mechanics & Geotechnical Engineering.

“...It can be inferred that on the portacell reinforced section, the intensity of pressure on top of the subgrade gets reduced by 78% at peak stress level in the first loading cycle. While this reduction is about 81.37% at peak stress level in the second loading cycle. Reduction in the vertical pressure on top of the subgrade will reduce the vertical strain, in-turn reduce rutting potential of the pavement and prolong the service life.” quoted from the CRR I Evaluation report on two NHAI sections NH45C (Thanjavoor, Tamil Nadu) and NH2 (Dhanbad, Jharkhand)

OUR RANGE OF TEMPORARY ACCESS & GROUND PROTECTION MATS



PORTADECK - Heavy duty (strength of 425 tons/sqm) system of interconnected unsinkable HDPE mats to form approach roads and platforms for heavy vehicles & equipment on muddy, marshy waterlogged soils (black cotton, high clay content).



PORTAMat – Light (36 kg self-weight) and quick assembly mat system that can form approach roads & platforms on beach & desert sands for easy access of vehicles. Also used to protect sensitive grass turfs during events and landscaping works.

OUR CLIENTS:



Border Road Organisation



TO KNOW MORE ABOUT PORTACELL, CONTACT US:

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