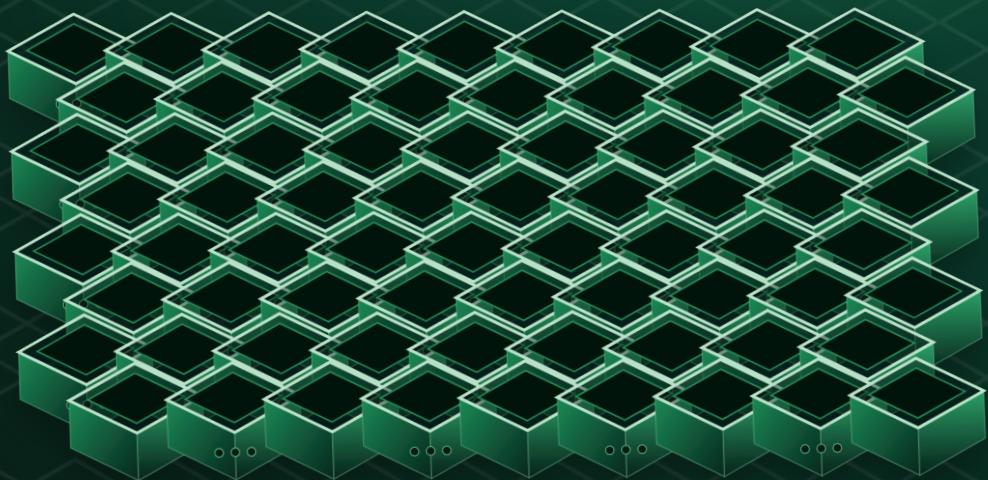


TECHNICAL PRODUCT BROCHURE

PERFORATED HDPE GEOCELL

330 / 100 SERIES

Textured cellular confinement system for road-base stabilization, load distribution and erosion-resistant granular confinement.



100 mm
CELL DEPTH

330 mm
WELD SPACING

1.50 mm
POST-TEXTURE THICKNESS

HDPE
UV-STABILIZED POLYMER

CELLULAR CONFINEMENT

Three-dimensional restraint for engineered road layers.

The 330/100 geocell is formed from textured, perforated HDPE strips joined at controlled intervals. When expanded and filled with compacted granular material, the interconnected cells restrain lateral movement, improve load distribution and preserve the geometry of the reinforced layer.

01

Lateral confinement
Cell walls restrict sideways displacement of aggregate under wheel loading and repeated trafficking.

02

Load distribution
The infill-cell composite spreads contact stresses over a wider subgrade area.

03

Drainage & interlock
Perforations permit cross-cell drainage and promote mechanical interaction with granular infill.

04

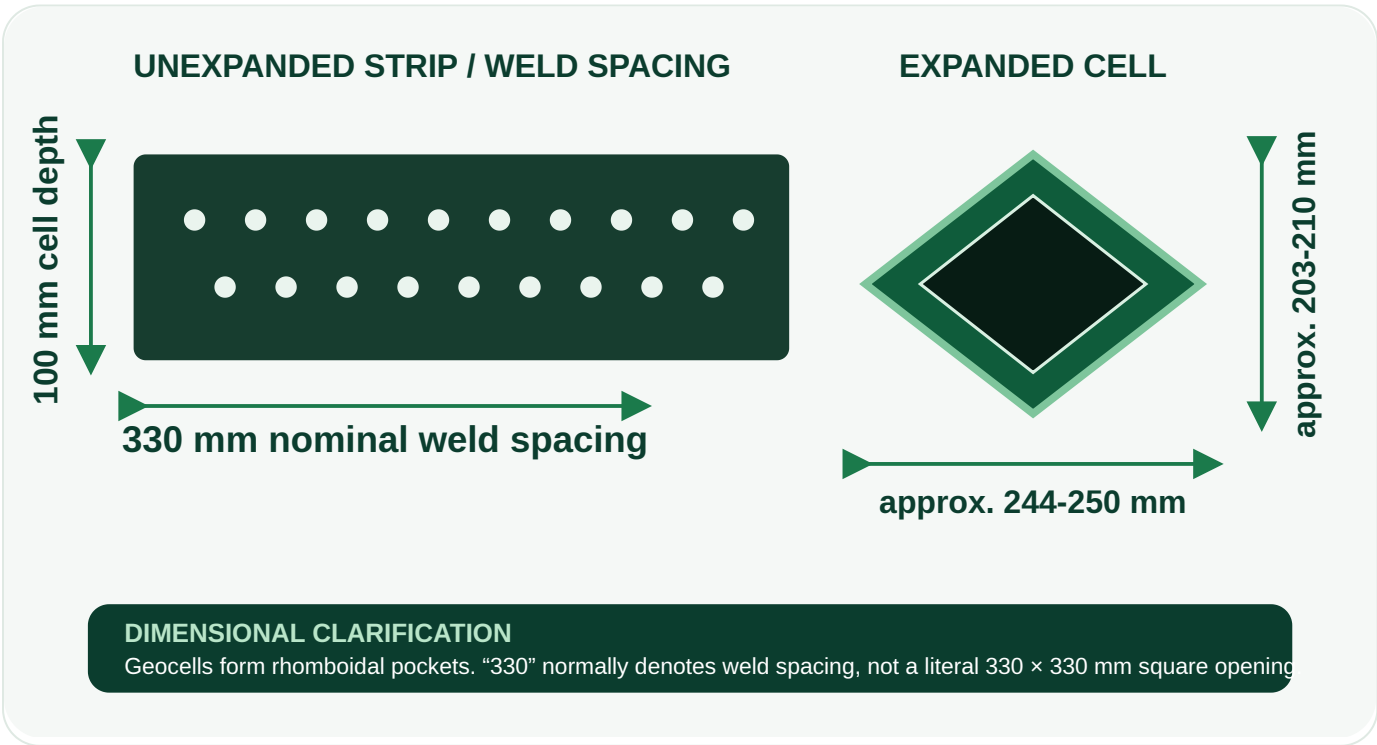
Construction control
Prefabricated panels establish a repeatable 100 mm reinforced layer across the road alignment.

RECOMMENDED USE

Road base or subbase stabilization

Suitable for paved and unpaved roads, access routes, shoulders, working platforms and weak-subgrade improvement where the pavement design specifies a cellular confinement layer.

Engineering requirement: final layer position, infill gradation, cover thickness and compaction criteria shall be approved by the pavement designer based on subgrade CBR, axle loading, drainage and design life.



TECHNICAL DATA

330/100 - textured and perforated HDPE geocell

The values below define the standard brochure configuration for technical evaluation. Final acceptance for any supply shall be based on the approved manufacturer data sheet, product sample, test reports and batch certificate of analysis.

Standard configuration

Premium 1.50 mm textured strip, 100 mm depth and 330 mm nominal weld spacing.

PROPERTY	UNIT	PROPOSED VALUE / REQUIREMENT
Polymer	-	Virgin high-density polyethylene (HDPE), UV stabilized
Surface configuration	-	Textured on both sides and perforated
Standard colour	-	Black
Nominal cell depth	mm	100 ± 3%
Nominal weld spacing	mm	330 ± 3%
Typical expanded cell aperture	mm	Approximately 244-250 wide × 203-210 long, at approved expansion
Nominal strip thickness, post texturing	mm	1.50 (-5%, +10%)
Perforation diameter	mm	Maximum 10; distributed in horizontal rows
Total perforated area	% wall area	Less than 12%
Polymer density	g/cm³	0.935-0.965
Carbon black content	%	1.5-2.0
Tensile strength at yield of strip	MPa	Minimum 20
Internal junction / seam strength	kN/m	Minimum 14.2, or 1.42 kN per 100 mm cell depth
Environmental stress-crack resistance	hours	Minimum 400 by NCTL index test
Low-temperature brittleness	°C	No failure at -70 or lower
Nominal expanded panel	m	2.44 × 6.15 (approximately 15.0 m²), unless otherwise approved

ISO 13426-1:2019

Internal junction strength

Index testing of geocell structural junctions under defined loading arrangements.

ASTM D5199-25

Nominal strip thickness

Thickness measurement for geosynthetics using controlled pressure and contact conditions.

ASTM D1505-25 / D1603-20

Polymer density & carbon black

Material identification and UV-stabilizing carbon-black content.

ASTM D638-22 / D5397-20

Tensile & stress-crack resistance

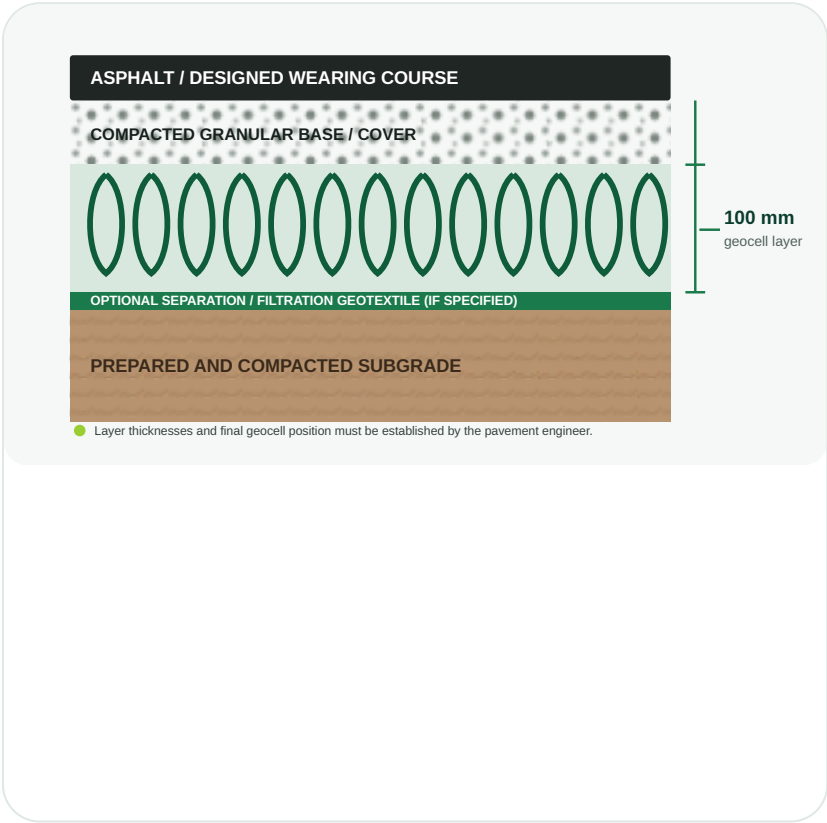
Index properties supporting quality control of the polymer strip.

Testing shall use the current controlled edition or an engineer-approved equivalent. A listed method does not by itself constitute certification; the delivered batch must be supported by traceable test documentation.

TYPICAL SYSTEM BUILD-UP

A confined base layer integrated into the pavement design.

The geocell layer acts together with the compacted infill. Performance depends on the composite system - not the polymer alone. The designer shall confirm subgrade preparation, drainage, infill characteristics and all pavement layer thicknesses.



Subgrade condition

Determine CBR or resilient modulus, moisture condition, soft zones and proof-roll response before installation.

Granular infill

Use approved, well-graded crushed aggregate. Typical maximum particle size should not exceed approximately 65 mm or the limit established by the approved design.

Compaction

Compact the filled cells and overfill to at least 95% Standard Proctor, or the higher requirement stated in the approved specification.

Drainage

Provide crossfall, edge drainage and separation/filtration geotextile where migration or pumping is possible.

Cover and surfacing

Provide at least 25 mm granular overfill before compaction; final cover and wearing course shall follow the pavement drawings.

CONFINEMENT

Restrains aggregate dilation and lateral shear deformation.

STRESS DISTRIBUTION

Transfers wheel loads across a wider reinforced footprint.

RUT RESISTANCE

Helps preserve base geometry under repeated trafficking when correctly designed and compacted.

No automatic thickness reduction: any reduction in aggregate quantity, base thickness or maintenance frequency must be justified by project-specific pavement analysis and approved by the responsible design engineer.

FIELD METHOD

Controlled deployment, infill and compaction.

Installation shall follow the approved method statement, drawings and manufacturer’s instructions. The sequence below is a concise road-base guide.



1

Prepare the subgrade

Trim to line and level, remove unsuitable material, correct soft spots and compact to the specified density.



2

Place separation layer

Install nonwoven geotextile where required for separation, filtration or support over weak subgrade.



3

Expand and anchor

Stretch panels to the approved aperture, align the cells and temporarily secure with pins or stakes.



4

Connect adjacent panels

Join perimeter cells using approved staples, connectors or tendons so adjoining top edges remain flush.



5

Place the infill

Fill progressively from the leading edge. Limit drop height to 1 m and never allow plant to travel on empty cells.



6

Overfill and compact

Overfill by at least 25 mm, compact to the required density and complete the designed cover or wearing course.

BEFORE INFILL	DURING INFILL	AFTER COMPACTION
Confirm panel model, cell depth, weld spacing, expansion, connections and absence of damaged welds.	Control aggregate gradation, drop height, panel displacement, cell filling and construction traffic.	Verify density, finished level, cover thickness, drainage and that no cell walls remain exposed.

Required accessories may include J-pins or stakes, heavy-duty pneumatic staples/connectors, tendons where designed, edge restraints and nonwoven geotextile.

QUANTITY PLANNING

Calculate supply from the approved treatment area.

Final procurement quantities should be based on approved drawings and verified site dimensions, including curves, junctions, slopes, edge details, connections, cutting and the project-approved allowance.

L × W

CALCULATE NET TREATMENT AREA FROM MEASURED LENGTH AND WIDTH

≈ 15.0 m²

NOMINAL EXPANDED COVERAGE PER 2.44 × 6.15 M PANEL

Area ÷ 15

PRELIMINARY PANEL COUNT BEFORE CUTTING AND SITE ALLOWANCE

+ Allowance

ADD THE QUANTITY APPROVED FOR CUTS, TRANSITIONS AND SITE CONDITIONS

Supply and documentation package

- Folded, film-wrapped panels
- Batch identification labels
- Dimensional inspection record
- Country-of-origin documentation

- Palletized export packing
- Manufacturer certificate of analysis
- Material test reports
- Installation guide and method support

Technical reference framework: ISO/TR 18228-5:2025 (geosynthetic stabilization design guidance); ISO 13426-1:2019 (geocell junction strength); ASTM D5199-25, D1505-25, D1603-20, D638-22, D5397-20, D3895-19 and D746-24, as applicable. Use current controlled editions or approved equivalents.

Product and submittal control: Final supply shall follow the approved drawings, required panel geometry, manufacturer data sheet, product sample, test certificates, packing configuration and project technical requirements.

TECHNICAL SUPPLY

Green Insulation Private Limited

Supporting civil, road, slope protection and ground-stabilization works with technical coordination and supply support across Pakistan.

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Scan to view company updates and product activity.