

Product Specification - GEOWEB® GW40V Geocells

GENERAL

The GEOWEB geocell product is manufactured from textured, perforated strips of high density polyethylene that are bonded together to create a network of interconnected cells. The GEOWEB cells can be filled with topsoil, aggregate, concrete, recycled materials, or other infill material for geotechnical applications such as: 1) load support for unpaved and paved roads, railways, ports, heavy-duty pavements, container yard, and pads; 2) gravity and reinforced walls, reinforced slopes and fascia walls; and, 3) slope, channel, and geomembrane protection.

DIMENSIONS

Parameter	Units	Value
Cell Depth (Available in 5 Depths) ¹	Inches (mm)	3 (75), 4 (100), 6 (150), 8 (200), 12 (300)
Cell Size (Length x Width +/- 10%)	Inches (mm)	18.7 x 20.0 (475 x 508)
Expanded Section Width	Cells	5
	Feet (m)	Varies: 7.7 to 9.2 (2.3 to 2.8)
Expanded Section Length	Cells	18, 21, 25, 29, or 34
	Feet (m)	Varies: 25.4 to 58.2 (7.7 to 17.8)

STRUCTURAL INTEGRITY AND SYSTEM PERFORMANCE

Parameter	Units	Value
Minimum Short Term Seam Peel Strength	lbf/in (N/cm)	≥ 80 (142)
Long-Term Seam Peel Strength (standard 4-inch sample width) ²	lb (N)	160 (710)
Internal Junction Efficiency ³	%	≥ 100
Mechanical Junction Efficiency (ATRA Key Connection) ²	%	≥ 100
Peak Friction Angle Ratio (δ/ϕ) ⁴	Unitless	0.95

MATERIAL PROPERTIES

Parameter	Test Method	Units	Value
Polymer Density	ASTM D1505 or D792	lbs/ft ³ (g/cm ³)	58.4 - 60.2 (0.935 - 0.965)
Flexural Storage Modulus	ISO 6721	Mpa	≥ 800
Carbon Black Content ⁴	ASTM D1603	%	1.5 - 2.0
Sheet Thickness Prior to Texture	ASTM D5199	mil (mm)	50 (1.27), -5% +10%
Sheet Thickness After Texture	ASTM D5199	mil (mm)	60 (1.52), -5% +10%
Texture Density (Texture Type/Shape: Rhomboidal)	--	per/in ² (per/cm ²)	140 -200 (22 - 31)

DURABILITY

Parameter	Test Method	Units	Value
Environmental Stress Crack Resistance	ASTM D1693	hrs	> 5,000
Environmental Stress Crack Resistance (Accelerated Test)	ASTM D5397	hrs	≥ 400
Resistance to Oxidation ⁶	EN ISO 13438	yrs	≥ 100
Resistance to Weathering ⁷	EN 12224	%	100

Notes:

- 1) 12-inch cell depth available in 21-cell panel length only.
- 2) A 4.0 in. (100 mm) wide seam sample shall support a 160 lb (72.5 kg) load for a period of 7 days minimum in a temperature-controlled environment undergoing a temperature change on a 10 hour cycle from ambient room to 130° F (54° C). Ambient room temperature is per ASTM E 41.
- 3) Junction efficiency determined as a percentage of junction performance (EN ISO 13426-1) to perforated strip performance (EN ISO 10319).
- 4) Typical design value for granular infill material. Consult with manufacturer to confirm value for other types of infill materials.
- 5) Standard black HDPE strips. For tan/green GEOWEB, hindered amine light stabilizer (HALS) content will be 2.0% by weight of carrier.
- 6) Predicted to be durable for a minimum of 100 years in natural soil with a pH between 4 and 9 and at a soil temperature ≤ 25°C.
- 7) 100% of original tensile strength retained following exposure to intense UV radiation and accelerated weathering in accordance with EN 12224.



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