

Product Specification - GEOWEB® GW20V Geocells

GENERAL

GEOWEB® 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 soil, aggregate, concrete, pulverized debris, recycled asphalt pavement, 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 basal embankments stabilization; 2) retaining structures, free-standing structures, and fascia walls; and, 3) slope, channel, and geomembrane protection.

DIMENSIONS

Parameter	Units	Value
Cell Depth (Available in 4 Depths)	Inches (mm)	3 (75), 4 (100), 6 (150), 8 (200)
Cell Size (Length x Width +/- 10%)	Inches (mm)	8.8 x 10.2 (224 x 259)
Expanded Section Width	No. Cells	10
	Feet (m)	Varies: 7.7 to 9.2 (2.3 to 2.8)
Expanded Section Length	No. Cells	18, 21, 25, 29, or 34
	Feet (m)	Varies: 12 to 27.3 (3.7 to 8.3)

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) ¹	lb (N)	160 (710)
Internal Junction Efficiency ²	%	≥100
Mechanical Junction Efficiency (Connection Type: ATRA Key) ²	%	≥100
Peak Friction Angle Ratio (δ/ϕ) ³	Unitless	0.95

MATERIAL PROPERTIES

Parameter	Test Method	Units	Value
Polymer Density	ASTM D1505 or D792	g/cm ³	0.935 - 0.965
Carbon Black Content ⁴	ASTM D1603	%	1.5 - 2.0
Sheet Thickness Prior to Texture	ASTM D5199	mm (mil)	1.27 (50), -5% +10%
Sheet Thickness After Texture	ASTM D5199	mm (mil)	1.52 (60), -5% +10%
Texture Type/Shape	--	--	Rhomboidal
Texture Density	--	indentations/cm ²	22 - 31

DURABILITY

Parameter	Test Method	Units	Value
Environmental Stress Crack Resistance	ASTM D1693	hrs	>5,000
Resistance to Oxidation ⁵	EN ISO 13438	yrs	≥50
Resistance to Weathering ⁶	EN 12224	%	100

Notes:

- 1) A 100-mm (4.0 in.) wide seam sample shall support a 72.5 kg (160 lb) 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 54° C (130° F). Ambient room temperature is per ASTM E 41.
- 2) Junction efficiency determined as a percentage of junction performance (EN ISO 13426-1) to perforated strip performance (EN ISO 10319).
- 3) Typical design value for clean granular infill material (i.e. - coarse sand or crushed aggregate). Consult with manufacturer to confirm value for other types of infill materials.
- 4) Standard black HDPE strips. For tan/green GEOWEB, hindered amine light stabilizer (HALS) content will be 2.0% by weight of carrier.
- 5) Predicted to be durable for a minimum of 50 years in natural soil with a pH between 4 and 9 and at a soil temperature ≤ 25°C.
- 6) 100% of original tensile strength retained following exposure to intense UV radiation and accelerated weathering in accordance with EN 12224.



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Product Specification - GEOWEB® GW30V Geocells

GENERAL

GEOWEB® 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 soil, aggregate, concrete, pulverized debris, recycled asphalt pavement, 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 basal embankments stabilization; 2) retaining structures, free-standing structures, 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)	11.3 x 12.6 (287 x 320)
Expanded Section Width	No. Cells	8
	Feet (m)	Varies: 7.7 to 9.2 (2.3 to 2.8)
Expanded Section Length	No. Cells	18, 21, 25, 29, or 34
	Feet (m)	Varies: 15.4 to 35.1 (4.7 to 10.7)

STRUCTURAL INTEGRITY AND SYSTEM PERFORMANCE

Parameter	Units	Value
<u>Minimum</u> 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 (Connection Type: ATRA Key) ³	%	≥100
Peak Friction Angle Ratio (δ/ϕ) ⁴	Unitless	0.95

MATERIAL PROPERTIES

Parameter	Test Method	Units	Value
Polymer Density	ASTM D1505 or D792	g/cm ³	0.935 - 0.965
Carbon Black Content ⁵	ASTM D1603	%	1.5 - 2.0
Sheet Thickness Prior to Texture	ASTM D5199	mm (mil)	1.27 (50), -5% +10%
Sheet Thickness After Texture	ASTM D5199	mm (mil)	1.52 (60), -5% +10%
Texture Type/Shape	--	--	Rhomboidal
Texture Density	--	indentations/cm ²	22 - 31

DURABILITY

Parameter	Test Method	Units	Value
Environmental Stress Crack Resistance	ASTM D1693	hrs	>5,000
Resistance to Oxidation ⁶	EN ISO 13438	yrs	≥50
Resistance to Weathering ⁷	EN 12224	%	100

Notes:

- 1) 12-inch cell depth available in 21-cell panel length only.
- 2) A 100-mm (4.0 in.) wide seam sample shall support a 72.5 kg (160 lb) 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 54° C (130° F). 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 clean granular infill material (i.e. - coarse sand or crushed aggregate). 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 50 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.



Product Specification - GEOWEB® GW30V6 Walls

GENERAL

GEOWEB® wall sections are manufactured from textured, perforated strips of high density polyethylene that are bonded together to create a network of interconnected cells. Fascia strips are non-perforated, UV-stabilized for long-term durability and are available in green and tan colors. Fascia strips are also available with pre-punched I-slots for establishing consistent mechanical junctions across the face of the wall using ATRA Key connectors. GEOWEB® walls can be used in a variety of earth retaining structure configurations including: 1) mechanically-stabilized earth (MSE) walls; 2) steepened slopes; 3) multilayered systems; and, 4) gravity retaining walls.

DIMENSIONS

Parameter	Units	Value
Cell Depth	Inches (mm)	6 (150)
Cell Size (Length x Width +/- 10%)	Inches (mm)	10.5 x 13.0 (267 x 330)
Expanded Section Width	No. Cells	8
	Feet (m)	Fixed: 8.67 (2.64)
Expanded Section Length	No. Cells	3, 4, 5, 6, 7
	Feet (m)	Varies: 2.63 to 6.13 (0.80 to 1.87)

STRUCTURAL INTEGRITY AND SYSTEM PERFORMANCE

Parameter	Units	Value
<u>Minimum</u> Short Term Seam Peel Strength	lbf/in (N/cm)	≥80 (142)
Long-Term Seam Peel Strength (standard 4-inch sample width) ¹	lb (N)	160 (710)
Internal Junction Efficiency ²	%	≥100
Mechanical Junction Efficiency (Connection Type: ATRA Key) ²	%	≥100
Peak Friction Angle Ratio (δ/ϕ) ³	Unitless	0.95

MATERIAL PROPERTIES

Parameter	Test Method	Units	Value
Polymer Density	ASTM D1505 or D792	g/cm ³	0.935 - 0.965
Carbon Black Content ⁴	ASTM D1603	%	1.5 - 2.0
Sheet Thickness Prior to Texture	ASTM D5199	mm (mil)	1.27 (50), -5% +10%
Sheet Thickness After Texture	ASTM D5199	mm (mil)	1.52 (60), -5% +10%
Texture Type/Shape	--	--	Rhomboidal
Texture Density	--	indentations/cm ²	22 - 31

DURABILITY

Parameter	Test Method	Units	Value
Environmental Stress Crack Resistance	ASTM D1693	hrs	>5,000
Resistance to Oxidation ⁵	EN ISO 13438	yrs	≥50
Resistance to Weathering ⁶	EN 12224	%	100

Notes:

- 1) A 100-mm (4.0 in.) wide seam sample shall support a 72.5 kg (160 lb) 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 54° C (130° F). Ambient room temperature is per ASTM E 41.
- 2) Junction efficiency determined as a percentage of junction performance (EN ISO 13426-1) to perforated strip performance (EN ISO 10319).
- 3) Typical design value for clean granular infill material (i.e. - coarse sand or crushed aggregate). Consult with manufacturer to confirm value for other types of infill materials.
- 4) Standard black HDPE strips. For tan/green fascia strips, hindered amine light stabilizer (HALS) content will be 2.0% by weight of carrier.
- 5) Predicted to be durable for a minimum of 50 years in natural soil with a pH between 4 and 9 and at a soil temperature ≤ 25°C.
- 6) 100% of original tensile strength retained following exposure to intense UV radiation and accelerated weathering in accordance with EN 12224.



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Product Specification - GEOWEB® GW40V Geocells

GENERAL

GEOWEB® 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 soil, aggregate, concrete, pulverized debris, recycled asphalt pavement, 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 basal embankments stabilization; 2) retaining structures, free-standing structures, 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	No. Cells	5
	Feet (m)	Varies: 7.7 to 9.2 (2.3 to 2.8)
Expanded Section Length	No. 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 (Connection Type: ATRA Key) ³	%	≥100
Peak Friction Angle Ratio (δ/ϕ) ⁴	Unitless	0.95

MATERIAL PROPERTIES

Parameter	Test Method	Units	Value
Polymer Density	ASTM D1505 or D792	g/cm ³	0.935 - 0.965
Carbon Black Content ⁵	ASTM D1603	%	1.5 - 2.0
Sheet Thickness Prior to Texture	ASTM D5199	mm (mil)	1.27 (50), -5% +10%
Sheet Thickness After Texture	ASTM D5199	mm (mil)	1.52 (60), -5% +10%
Texture Type/Shape	--	--	Rhomboidal
Texture Density	--	indentations/cm ²	22 - 31

DURABILITY

Parameter	Test Method	Units	Value
Environmental Stress Crack Resistance	ASTM D1693	hrs	>5,000
Resistance to Oxidation ⁶	EN ISO 13438	yrs	≥50
Resistance to Weathering ⁷	EN 12224	%	100

Notes:

- 1) 12-inch cell depth available in 21-cell panel length only.
- 2) A 100-mm (4.0 in.) wide seam sample shall support a 72.5 kg (160 lb) 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 54° C (130° F). 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 clean granular infill material (i.e. - coarse sand or crushed aggregate). 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 50 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.

