



CCIS Geocell

Geocells were invented in the early B0's and patented by the United States Army Corps of Engineers. The early use of the technology was for the construction of roads over soft soils for military use. Today, the GeoCell is not only used for base stabilization, but also for erosion control of slopes and channels as well as in construction of retaining walls.

The GeoCell is made from high density polyethylene (HDPE) and manufactured in the USA. HDPE has been used for the most demanding industrial products since 1955. The three-dimensional cells impede lateral movement of the infill material, increasing structural strength and locking in materials for erosion protection. The cell walls are perforated to allow water flow through the system, creating improved root zone between cells for vegetated applications. On concrete filled GeoCells, the HDPE matrix becomes the form for the concrete. There is no need for wood forms or rebar. The panels are extended and the concrete poured directly into the GeoCell.

MATERIAL PROPERTIES

Description	Test Method	Units	Test Value
Polymer Density	ASTM D 1505	lb/ft3 (g/cm3)	58.4-60.2 (0.935-0.965)
Environmental Stress Crack Resistance	ASTM D 5397	hours	>400
Carbon Black Content	ASTM D 1603	% by weight	1.5% minimum
Nominal Sheet Thickness before texturing	ASTM D 5199	mil (mm)	50 (1.27) -5%, +10%60
Nominal Sheet Thickness after texturing	ASTM D 5199	mil (mm)	(1.52) -5%, +10%

PHYSICAL PROPERTIES

Description	Unit	Test Value
Nominal - Expanded Cell Size Length x Width	in (mm)	11.3 (287) x 12.6 (320)
Nominal - Expanded Cell Area	in ² (cm ²)	71.3 (460)
Nominal - Expanded Panel Size (width x length)	ft (m)	17.85 (5.44) x 27.4 (8.35)
Nominal - Expanded Panel Area	ft ² (m ²)	489 (45.4)

> Cell Depth	in (mm)	2 (50)	3 (75)	4 (100)	6 (150)	8 (200)
> Seam Peel Strength	lbf (N)	160 (710)	240 (1065)	320 (1420)	480 (2130)	640 (2840)
> Seam Hang Strength	A 4 in (102mm) weld joint supporting a load of 160 lbs (72.5 kg) for 30 days minimum or a 4 in (102mm) weld joint supporting a load of 160 lbs (72.5 kg) for 7 days minimum while undergoing temperature change from 74°F (23°C) to 130°F (54°C) on a 1 hour cycle.					

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