

MiraCell®

Cellular Confinement System

Engineered from HDPE sections for maximum performance



Product Information

MiraCell® is a perforated cellular confinement system engineered from HDPE sections for maximum performance. MiraCell® is available in a number of depth and cell opening combinations. MiraCell® is supplied in a folded configuration that minimises transport costs to site yet can be readily expanded on site for very quick installation. MiraCell® has been perforated to ensure that each cell does not become water saturated during use.

Applications

MiraCell® provides advantages in the following applications.

Slope Protection: The cellular configuration allows for effective protection and resistance to downward migration of slope materials due to hydraulic flow events. The cell is very effective at retaining soils within the cell structure

in applications of cut slopes and where the natural cut materials cannot support vegetated slopes. Imported soils

placed within the cell create an improved environment for vegetative growth and as such soils are confined, there will be increased resistance against possible movement down the slope.

Channel Protection: The cellular configuration improves the hydraulic performance of conventional protection materials such as placed aggregate. By confinement of the aggregate within the cell an effective increase in the shear resistance of the placed aggregate is obtained. Channels that use MiraCell are capable of larger flow events.

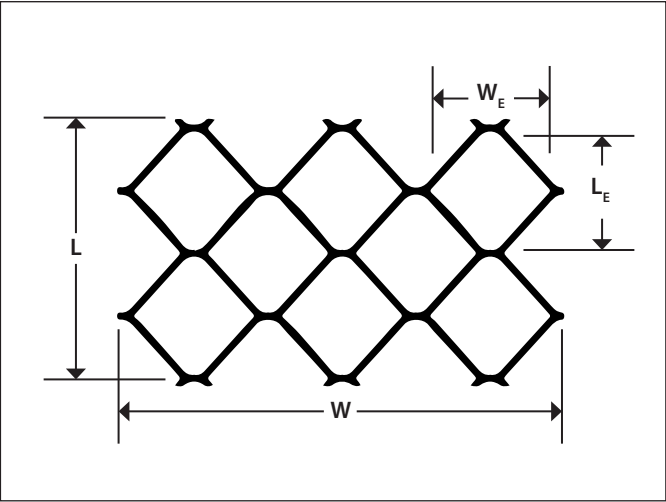
Base Stabilisation: The cellular confinement of base materials in a roading application increases resistance to lateral displacement of conventional road base materials. The use of MiraCell® reduces rutting of the pavement and can increase pavement life.

Miracell® Cellular Confinement System

Product Dimensions

Dimensions		Small Cell MCSP	Medium Cell MCMP	Large CELL MCLP
Expanded Cell Size (width x length)	- mm	259 x 224	320 x 287	503 x 478
Expanded Panel Size (width x length)*	- m	2.59 x 7.61	2.56 x 9.75	2.52 x 16.25
		10 cells x 34 cells	8 cells x 34 cells	5 cells x 34 cells
Expanded Panel Area	- m2	19.7 ± 1%	24.96 ± 1%	40.95 ± 1%

*Other custom size panels available upon request



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Typical Properties

75mm Cell Depth

Index Properties	Test Method	Unit	Small Cell MCSP	Medium Cell MCMP	Large Cell MCLP
Polymer	-	-	HDPE	HDPE	HDPE
Carbon Black Content	ASTM D 1603	%	1-2%	1-2%	1-2%
Density	ASTM D 1505	g/cm ³	0.94-0.96	0.94-0.96	0.94-0.96
Sheet Thickness*	ASTM D 5199	mm	1.52	1.52	1.52
Seam Peel Strength*	ENISO 13426-1	N	≥ 1160	≥ 1160	≥ 1160
Splitting Strength	ENISO 13426-1	N	2250	2250	2250
Weld Spacing	-	mm	356	445	712
Cell Depth	-	mm	75	75	75
Environmental Stress Crack Resistance	ASTM D 1693	hours	>7000	>7000	>7000

100mm Cell Depth

Index Properties	Test Method	Unit	Small Cell MCSP	Medium Cell MCMP	Large Cell MCLP
Polymer	-	-	HDPE	HDPE	HDPE
Carbon Black Content	ASTM D 1603	%	1-2%	1-2%	1-2%
Density	ASTM D 1505	g/cm ³	0.94-0.96	0.94-0.96	0.94-0.96
Sheet Thickness*	ASTM D 5199	mm	1.52	1.52	1.52
Seam Peel Strength*	ENISO 13426-1	N	≥ 1600	≥ 1600	≥ 1600
Splitting Strength	ENISO 13426-1	N	2250	2250	2250
Weld Spacing	-	mm	356	445	712
Cell Depth	-	mm	100	100	100
Environmental Stress Crack Resistance	ASTM D 1693	hours	>7000	>7000	>7000

150mm Cell Depth

Index Properties	Test Method	Unit	Small Cell MCSP	Medium Cell MCMP	Large Cell MCLP
Polymer	-	-	HDPE	HDPE	HDPE
Carbon Black Content	ASTM D 1603	%	1-2%	1-2%	1-2%
Density	ASTM D 1505	g/cm ³	0.94-0.96	0.94-0.96	0.94-0.96
Sheet Thickness*	ASTM D 5199	mm	1.52	1.52	1.52
Seam Peel Strength*	ENISO 13426-1	N	≥ 2400	≥ 2400	≥ 2400
Splitting Strength	ENISO 13426-1	N	2250	2250	2250
Weld Spacing	-	mm	356	445	711
Cell Depth	-	mm	150	150	150
Environmental Stress Crack Resistance	ASTM D 1693	hours	>7000	>7000	>7000

200mm Cell Depth

Index Properties	Test Method	Unit	Small Cell MCSP	Medium Cell MCMP	Large Cell MCLP
Polymer	-	-	HDPE	HDPE	HDPE
Carbon Black Content	ASTM D 1603	%	1-2%	1-2%	1-2%
Density	ASTM D 1505	g/cm ³	0.94-0.96	0.94-0.96	0.94-0.96
Sheet Thickness*	ASTM D 5199	mm	1.52	1.52	1.52
Seam Peel Strength	-	N	≥ 3200	≥ 3200	≥ 3200
Splitting Strength	ENISO 13426-1	N	2250	2250	2250
Weld Spacing	-	mm	356	445	711
Cell Depth	-	mm	150	150	150
Environmental Stress Crack Resistance	ASTM D 1693	hours	>7000	>7000	>7000

Long-term seam peel strength test shall be performed on all resin or pre-manufactured sheet or strips. A 100mm wide seam sample shall support a 72.5kg load for a period of 168 hours minimum in a temperature- controlled environment undergoing a temperature change on a 1-hour cycle from 23C to 54°C.

*Sheet Thickness value is -5%+ 10%.

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We have supplied products to some of the largest recent infrastructure works in Australia. Global Synthetics provides major benefits to any geotechnical engineering project with the right products and our technical expertise.

Global Synthetics products are used in the following applications:

- Pavement Stabilisation
- Ground Improvement
- Soil Reinforcement and Retaining Structures
- Water Management
- Drainage Systems & Hydraulic Works
- Landfills
- Coastal Erosion Structures

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