

# TerraCell® 280

## Material

TerraCell® 280 is a perforated, textured geocell manufactured from High Density Polyethylene (HDPE) to the following minimum standards:

## Fabrication

TerraCell® 280 sections are manufactured from 58 strips of HDPE; each of appropriate height by 142 inches (3.6m) long. Typical panels are 29 cells long and 5 cells wide. Cell walls are textured with a multitude of rhomboidal indentations with a surface density of 22 to 31 per cm<sup>2</sup> (140 to 200 per in<sup>2</sup>). Perforations remove 16% ± 3% of the cell wall. Cell joints are ultrasonically spot-welded with 3 welds per inch uniformly spaced across the height of each strip. Seam strengths are the same across the entire height of the cell joint and meet the minimum tensile requirements below:

## Seam Hang Strength

Seam Hang Strength – A 102 mm (4.0 in.) weld joint supporting a load of 72.5 kg (160 lbs.) for 30 days minimum or a 102 mm (4.0 in.) weld joint supporting a load of 72.5 kg (160 lbs.) for 7 days minimum while undergoing temperature change from 23° C (74° F) to 54° C (130° F) on a 1 hour cycle.

## Dimensions

TerraCell® 280, in expanded configuration, has nominal dimensions of 3, 4, 6 and 8 inch cell depths with an optimal width of 8.4 feet and optimal length of 45 feet. Optimal panel expanded area is 378 ft<sup>2</sup> (35.14m<sup>2</sup>). Other panel lengths can be custom-made; panel length is simply a function of number of strips welded. Unexpanded spacing of weld joints is 28 inches. Optimal cell area is 20 inches by 18.7 inches nominal. Individual cell area is 187 square inches (1206 cm<sup>2</sup>) nominal.

## Additional Information

The quality control system used in the manufacturing of TerraCell® is in compliance with ISO9001:2000 standards. TerraCell® is licensed from the United States Army under Patent No. 4,797,026. Please contact Hanes Geo Components, or a TerraCell® distributor for more information.

| PROPERTY  | TEST METHOD | ENGLISH                                 | METRIC                                 |
|---|-------------|---|--|
| <b>Material</b>                                       |             |   |  |
| Nominal Sheet Thickness Before Texturing <sup>1</sup> | ASTM D5199  | <b>50, +10%, -5%</b> mils               | <b>1.270, +10%, -5%</b> mm             |
| Nominal Sheet Thickness After Texturing <sup>1</sup>  | ASTM D5199  | <b>60, +10%, -5%</b> mils               | <b>1.524, +10%, -5%</b> mm             |
| Density   | ASTM D1505  | <b>0.540 - 0.558</b> oz/in <sup>3</sup> | <b>0.935 - 0.965</b> g/cm <sup>3</sup> |
| Carbon Black Content                                  | ASTM D1603  | <b>1.5 %</b>                            | <b>1.5 %</b>                           |
| Environmental Stress Crack Resistance                 | ASTM D1693  | <b>6000</b> hours                       | <b>6000</b> hours                      |
| Environmental Stress Crack Resistance                 | ASTM D5397  | <b>&gt;400</b> hours                    | <b>&gt;400</b> hours                   |
| <b>Fabrication</b>                                    |             |   |  |

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| PROPERTY                                       | TEST METHOD | ENGLISH        | METRIC        |
|--|-------------|----------------|---------------|
| Seam Peel Strength <sup>2</sup>                |             | -              | -             |
| 8" Cell Depth (Nominal Panel Weight - 114 lbs) |             | <b>640 lbs</b> | <b>2847 N</b> |
| 6" Cell Depth (Nominal Panel Weight - 86 lbs)  |             | <b>480 lbs</b> | <b>2135 N</b> |
| 4" Cell Depth (Nominal Panel Weight - 57 lbs)  |             | <b>320 lbs</b> | <b>1423 N</b> |
| 3" Cell Depth (Nominal Panel Weight - 43 lbs)  |             | <b>240 lbs</b> | <b>1068 N</b> |

1 Mean of 10 measurements

2 Seam Peel Strength per U. S. Army Corps of Engineers Technical Report GS-86-19, Appendix A

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