Cell-Tek’s Slope Grid consists of a 3D matrix of interconnected cells which form a blanket to protect the earth. Slope Grid prevents erosion, soil migration, and damaging shifting forces caused by water and wind. Slope Grid can also be planted to enhance the natural beauty of the environment and further fortify the slope. This restoration of natural vegetation enables root growth to secure the slope.
Slope Grid FACTS

Cell Detail

**Cell Dimensions**

<table>
<thead>
<tr>
<th>Dimensions</th>
</tr>
</thead>
<tbody>
<tr>
<td>10.7&quot; (271mm)</td>
</tr>
<tr>
<td>12.4&quot; (315mm)</td>
</tr>
</tbody>
</table>

**Manufactured Cell Depths**

- 4” = 100 mm
- 6” = 150 mm

**Weld Distance**

17” (432mm ± 2.5 mm)

**Expanded Unit Dimensions**

- 8’ x 29’
- 2.4m x 8.7m

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**Material Specifications**

<table>
<thead>
<tr>
<th>Properties</th>
<th>Test Method</th>
<th>Test Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Material Composition</td>
<td>ASTM D1505</td>
<td>Polymer; Virgin HDPE Density: 0.9574 g/cm³</td>
</tr>
<tr>
<td>Nominal Sheet Thickness</td>
<td>ASTM D5199</td>
<td>1.45 mm</td>
</tr>
<tr>
<td>Environmental Stress Cracking</td>
<td>ASTM D1693</td>
<td>3500 Hrs.</td>
</tr>
<tr>
<td>Stabilizer</td>
<td>ASTM D297-13</td>
<td>1.55% carbon black</td>
</tr>
<tr>
<td>Short Term Seam Peel Strength</td>
<td>4” (100 mm)</td>
<td>1542N</td>
</tr>
<tr>
<td></td>
<td>6” (150 mm)</td>
<td>2170N</td>
</tr>
<tr>
<td>Long Term Seam Peel Strength</td>
<td>A 100 mm (4 inch) wide section sample shall support a (160 lb.) load for a period of 7 days (168 hrs.) minimum in a temperature controlled environment undergoing a temperature change on a 1 hour cycle from ambient room temperature to (130° F)</td>
<td></td>
</tr>
</tbody>
</table>

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**Product Description**

<table>
<thead>
<tr>
<th>Item Code</th>
<th>Cell Depth</th>
<th>Expanded Unit Dimensions</th>
<th>Area/Unit</th>
<th>Max Pallet Qty</th>
</tr>
</thead>
<tbody>
<tr>
<td>SLP-4</td>
<td>4” (100 mm)</td>
<td>8’ x 29’ (2.4m x 8.7m)</td>
<td>232 SF</td>
<td>18 units</td>
</tr>
<tr>
<td>SLP-6</td>
<td>6” (150 mm)</td>
<td>8’ x 29’ (2.4m x 8.7m)</td>
<td>232 SF</td>
<td>12 units</td>
</tr>
</tbody>
</table>

**Note:** Available in 4” or 6” cell depths
What accessories do I need?

If your slope is not very steep, perhaps below 45°, then you can likely use rebar J hooks to keep the Slope Grid pinned to the earth.

If your slope is steep, perhaps greater than 45°, then you should use earth anchors, tendons, rebar J hooks and u-bolts to keep the Slope Grid pinned to the earth.

NOTE: Cell-Tek Geosynthetics LLC assumes no liability, expressed or implied, for the design of how and where to install Slope Grid. It is highly recommended that a qualified engineer evaluate the site and provide advice on which products to use and how to use them. We can only provide general guidelines which could work in most situations. Many factors should be considered including soil conditions, water flow, slope angle, history of slope conditions, weight in infill in cells, etc.
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1. Anchoring / Tendons: Earth anchors and tendons vary in size and break strengths. Refer to detailed rhino earth anchors (chart 1) tendons (chart 2).

2. Slope Grid varies between 2", 6", and 8" cell depths. Choose proper cell depth depending on degree of slope, soil conditions, hydraulic forces in your region.

3. Vegetation: Include a turf reinforcement mat or erosion control blanket. This will prevent wash out until vegetation is established.

4. It is recommended one grid with stainless steel tendon.

5. INFIL: Slope Grid can be filled with topsoil, gravel, stone or concrete. Choose an infill which is suitable to withstand the applicable hydraulic conditions.

6. In cases where soils are so poor that there is a concern that the soil will slump downward below the Slope Grid, you may want to install a non-woven geotextile as an undrainage. In this case you will need to cut holes where vegetation such as bushes or trees are being installed so that the roots can grow deeper. For this you will need to select a different Slope Grid. It is unlikely the vegetation will survive with a non-woven geotextile barrier because the roots will not have enough room to grow.

Earth Anchor (Forged, Galvanized, Helix Anchor)

- 1/4" 4,000 lb. holding strength
- 3/16" 3,000 lb. holding strength
- 3/8" 6,000 lb. holding strength

U-Bolt (Drop Forged, Galvanized Wire Rope Clip)

- J-Hook (24" H, 18" H, 14" H)
- J-Hook (84 square)

Tendons (Galvanized Steel Aircraft Cable)

- GAC-A 3/16" 3,000 lb. break strength
- GAC-B 5/32" 6,000 lb. break strength

- U-Bolt (Drop Forged, Galvanized Wire Rope Clip)
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This system consists of the geocellular Slope Grid, Earth Anchors, Tendons, Rebar J Hooks and U-Bolts. See page 2 for additional details.

Call Cell-Tek Geosynthetics LLC for further advice, 410-721-4844.

Earth Anchors are used to secure the system at the top of the slope.
Galvanized Aircraft Cabling is used as a Tendon that stretches through the system in rows at certain intervals and prevents the Grid from sliding down the slope.
U-Bolts act as ‘stops’ to prevent the Grid from sliding along the Tendons and also as fasteners to the Earth Anchors at the top and to the Rebar J Hooks at the bottom.
Rebar J Hooks are used to keep tension on the tendons and to secure the Grid at the bottom of the slope.
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UNDERLAYMENT: If you are filling the cells with aggregates such as gravel or rocks of any size install a non-woven geotextile fabric below the grid. This will keep the stones in the cells and prevent them from migrating down into the earth over time. If you are filling the cells with soil and planting vegetation on top then generally, you do not install a non-woven geotextile underlayment because it would inhibit root growth. In some rare cases where soils are so poor that there is concern that the soil will slump down behind/below the Slope Grid, you may want to install a non-woven geotextile as an underlayment. In this case, you will need to cut holes where vegetation such as bushes or trees are being installed so that the roots can grow deeper. If you plan to plant the entire area with grasses, for example, do not install a fabric. It’s unlikely the vegetation will survive with a non-woven geotextile barrier because the roots will not have enough room to grow.
General guide for earth anchors, tendons, J-hooks, and u-bolts*

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### Choosing Tendon Strength

<table>
<thead>
<tr>
<th>SLOPE GRID CELL DEPTH</th>
<th>TENDONS</th>
<th>U-BOLTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>4” cell</td>
<td>3/16” - 3,700 lbs. break strength (GAC-A)</td>
<td>3/16” (U-BOLT A)</td>
</tr>
<tr>
<td>6” cell</td>
<td>1/4” - 6,100 lbs. break strength (GAC-B)</td>
<td>1/4” (U-BOLT B)</td>
</tr>
</tbody>
</table>

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Do I need an underlayment?

If you are filling the cells with aggregates (gravel/rocks) then install a non-woven geotextile fabric below the grid. This will keep the stones in the cells and prevent them from migrating down into the earth over time.

If you are filling the cells with soil and planting vegetation, generally, you should not install an underlayment because it would inhibit root growth. In some rare cases where soils are so poor that there is concern the soil will slump down behind or below the Slope Grid, you may want to install a non-woven geotextile fabric underlayment. In this case you will need to cut holes where vegetation such as bushes or trees are being installed so that the roots can grow deeper.

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For vegetated slopes we highly recommend the use of a biodegradable blanket. This allows plants the time to take root and flourish. The blanket prevents surface erosion of top soil during this time.

100% Coconut Fiber + 2 Organic Jute Nets = Biodegradable Erosion Control Blanket

CFB is made with uniformly distributed 100% coconut fiber and two organic jute nets securely sewn together with biodegradable thread. The CFB has functional longevity of approximately 24 months, but will vary depending on soil and climatic conditions, and is suitable for slopes 1:1 and medium to high flow channels.
Slope Grid consists of long strips that are welded together at intervals. The long strips need to be parallel to the hillside.

**CORRECT DIRECTION FOR CELLS:**

**INCORRECT DIRECTION FOR CELLS:**
Multiple geocellular grids must be connected to each other to create a continuous matrix of cells. See instructions below. They can be connected “cell wall to cell wall” or “weld end to weld end”, the result is the same.

**Staple at 1” intervals to create a seam**

**Type 1 - Cell Wall Connection**

**Type 2 - Weld End Connection**

- Use heavy duty staples
Clear debris.
Install a row of Earth Anchors at the crest of the slope.
Drill holes in collapsed grid for tendons (galvanized steel aircraft cabling).

**Tip** – Sharpen end of tendon before threading through holes in grid.
Fasten U-Bolts
Drape it down the hillside...

Be safe! Tether workers with rope.

TIP: Temporarily stake the spools of tendons to the crest of the slope.
Connect one grid to another with pneumatic stapler.
BASIC INSTALLATION GUIDE

Install u-bolts and J hooks at predetermined intervals throughout each column of tendons.
Fill cells with topsoil, install biodegradable coconut fiber mat and plants.
BASIC INSTALLATION GUIDE

Call with any questions!
See more information about Slope Grid at
www.celltekdirect.com
410-721-4844
info@celltekdirect.com