



INSTALLATION PROCEDURES - BASE STABILIZATION

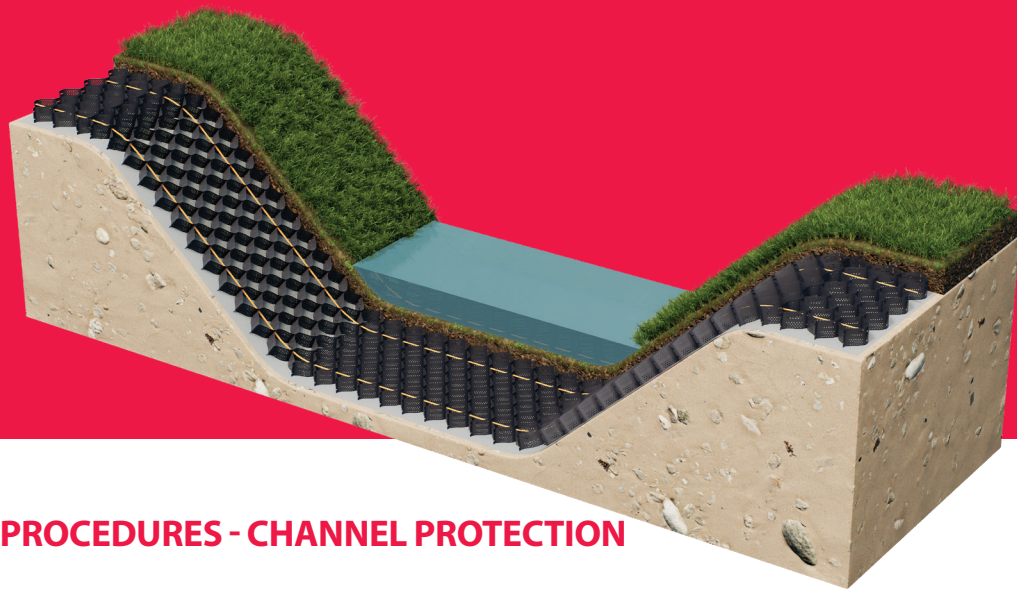


- 1| Prepare subgrade based on engineer's specification. Install geotextile, biaxial grid or FabGrid™ per engineers' specification.
- 2| Typical installation crew is comprised of five (5) laborers and one (1) supervisor. No specialized equipment is required.
- 3| Choose the direction of the expansion of the panels based on geometry of the area.
- 4| Panels are joined with a pneumatic stapler and galvanized staples or with our one-piece BaseLok™ Cable Locks. Before expansion, panels can be pre-joined to cover greater areas per installation.
- 5| Panels need to be temporarily staked open until fill material is in place. Typical stakes are straight rebar or wood stakes that are 3 times the depth of the cell. Once the GeoCells are filled, the stakes can be removed and re-used. If stakes cannot be used, sandbags or fill material can be placed on perimeter cells.
- 6| Granular material is recommended: if using angular rock, assure that it is thoroughly graded and no more than 1/3 of cell depth. Rounded rock or organic materials are not recommended.
- 7| If panels are placed above grade, a dirt ramp should be built to allow the trucks to get on top of the expanded panels.
- 8| Once the fill material is on the expanded panels, the blade of the loader is used to push the infill material on the cells. Do not drive over unfilled cells. Over fill the cells by 2-3 inches and compact well with a smooth vibratory roller.



INSTALLATION PROCEDURES - SLOPE REINFORCEMENT

- 1| Consult with design engineer to determine specific anchoring method.
- 2| Stakes are typically used on slope less than or equal to 3H:1V. Tendon systems or twist anchors are usually used on slopes steeper than 3H:1V.
- 3| Installation can typically be carried out with five (5) laborers and one (1) supervisor.
- 4| Create a smooth and unvarying surface before application of the GeoCell. Some applications might require a non-woven fabric based on project parameters.
- 5| Panels are joined with a pneumatic stapler and galvanized staples or with our one-piece BaseLok™ Cable Locks.
- 6| Panels will need to be either pre-cut or joined depending on the length of the slope. Prepare pre-cut or pre-connect panels at the top of the slope.
- 7| If the project design requires tendons, feed the tendons through the collapsed panel and attach one end to the dead man anchor in the anchor trench. Pull the tendons down the slope to the toe of the slope.
- 8| Place a minimum of one cell inside the anchor trench and stake every other cell inside the anchor trench. Stretch the panel(s) down the slope and stake every other cell at the bottom.
- 9| With the tendons through the panel, tie the tendon to the cell wall or to a load displacement washer every 3-6 cells depending on project requirement. Pre-threaded panels that are already tied to load displacement washers can also be purchased.
- 10| Proceed joining and expanding adjacent panels.
- 11| Backfill the anchor trench each day after the day's final panel is secured. Panels can be filled once the anchor trench is thoroughly backfilled. When filling the cells, work from the top down. Do not drop fill material more than 3' (1 m) from GeoCell panel.



INSTALLATION PROCEDURES - CHANNEL PROTECTION

- 1| Consult with design engineer to determine specific anchoring method.
- 2| Anchoring will be based on channel geometry, area lined (full channel or only slopes) and flow velocities. Stakes are typically used on slope less than 3H:1V. Tendon systems or twist anchors are usually used on slopes steeper than 3H:1V.
- 3| Installation can typically be carried out with five (5) laborers and one (1) supervisor.
- 4| Create a smooth and unvarying surface before application of the GeoCell. Install a non-woven fabric or geomembrane liner based on project requirements.
- 5| When connecting panels, use a pneumatic stapler with galvanized staples, or you may also use BaseLok™ Cable Locks.
- 6| Panels will need to be either pre-cut or joined together depending on the length of the slopes or cross section of the channel. Pre-cut or pre-connect panels at the top of the slope to cover the slope if the slope is the only section being lined or calculate length based on the full cross section of the channel.
- 7| If a tendons system is being used, feed the tendon through the collapsed GeoCell panel and attach one end to the dead man anchor in the anchor trench. Have enough tendon to reach the opposite side anchor. Enough tendon will be needed to tie to the cell walls or the load displacement washers. A single tendon length should be used along the full cross section of the channel.
- 8| Place a minimum of one cell inside the anchor trench and stake in place every other cell. Stretch the panel(s) down the slope and stake at the bottom of the slope every other cell, or if the full channel is lined, also across the bottom and up the opposite slope area. Anchoring the panels at the bottom of the slopes impedes bridging of the GeoCell panel on the transition from slope to bottom of the channel.
- 9| Tie the tendon to the cell wall or a load displacement washer every 3-6 cells. Pre-threaded panels already tied to load displacement washers can also be purchased. Proceed joining and expanding adjacent panels.
- 10| Backfill the anchor trench each day after the day's final panel is secured. Panels can be filled once the anchor trench is thoroughly backfilled. Fill material is dependent on the flow velocities of the channel. When filling the cells, work from the top down. Do not drop fill material more than 3' (1 m) from GeoCell.



INSTALLATION PROCEDURES - RETAINING WALLS

- 1| Smoothness, firmness of the subgrade as well as proper drainage and discharge are based on requirements set by the project engineer.
- 2| Geotextile or uniaxial geogrid may be necessary - consult with engineer. Generally, it will be applied at the base and every 3-4 layers of the GeoCell. The panel layout for the GeoCell should be determined before installation commences.
- 3| Installation can typically be carried out between five (5) laborers and one (1) supervisor.
- 4| When pre-connecting panels, use a pneumatic stapler and galvanized staples. You may also use BaseLok™ Cable Locks.
- 5| When using uniaxial grid to reinforce the wall system, embed each layer between 60%-110% of the height of the wall based on requirements set by the project engineer.
- 6| When filling each panel, use a rebar spreader bar to hold the cells open. Upon filling each panel, remove the stretcher bars for reuse. Each cell should be overfilled by roughly 2" (5 cm) before compacting. Apply and compact fill material behind the cells.
- 7| Make sure each GeoCell layer is aligned directly above the layer below. Leave roughly 3-4 inches (7 -10 cm) between layers when working with vegetated layers. Depending on application specifics, concrete or angular rock can be used to fill the frontmost cell. Organic soil can also be used as filler when dealing with vegetated surfaces.

