



ITLGC Geocell Installation Guide | BASE STABILIZATION

Purpose

GeoCells provide a three-dimensional confinement for aggregate, sand and other non-cohesive materials, creating a stable base layer for unpaved and paved applications. This guideline outlines the recommended installation process for load support and base stabilization.

Applications:

- Haul Roads
- Parking Lots
- Work Platforms
- Temporary or Permanent Roadways

Materials Equipment

- GeoCell panels- Cell depth and aperture per engineer's design.
- Separation Layer Options (choose per design and soil conditions)
 - Nonwoven Geotextile- Filtration and separation between aggregate and subgrade.
 - Biaxial Geogrid- Tensile reinforcement to improve bearing capacity.
 - Composite BX laminated to a nonwoven fabric- Combines reinforcement and separation in one layer.
- Anchoring devices- Wood or rebar stakes (length \approx three times the cell depth), sandbags or shovel full of infill material.
- Connection devices- Cable ties or pneumatic stapler with staples.
- Infill material- per engineer's design (well graded angular rock, sand, local fill and others).
 - Not recommended: Rounded rock (river rock, pea gravel), organic soil or clay.
- Compaction equipment- Static smooth drum roller (vibration OFF)
- Hand tools- Utility knife (hook blades preferable), measuring tape/wheel, 3-5 lb. mallet, shovels, chalk line.

Site Preparation

- Clear site- Remove vegetation, debris and if necessary, topsoil.
- Grade to design elevation- Maintain positive drainage.
- Compact subgrade- If possible 95% standard proctor density.
- Install separation layer (if specified)- Nonwoven geotextile, BX grid or composite BX geogrid laminated to nonwoven fabric.

Separation Layer Placement

- Unroll separation layer directly over the prepared subgrade.
- Overlap seams per rule of thumb based on CBR values:

CBR Value Overlap Distance

1	3 ft (0.9 m)
2	2 ft (0.6 m)
3+	1 ft (0.3 m)

- Remove wrinkles from the separation layer before GeoCell placement.

GeoCell Expansion and Positioning

- Based on the geometry of the area to be covered decide in what direction the panels should be deployed.
- Position collapsed panels at the starting point.
- Based on crew size (typical 5 workers per crew) and experience multiple collapsed panels can be pre-joined (both in length and width) so that during expansion multiple panels are deployed at the same time. This increases the speed of the installation.
- Measure the predetermined panel length (example: two ITLGC30 panels at 27.4 feet each are pre-connected then measure and mark approximately 54.8 feet).
- Expanding to the correct length ensures correct panel width.
- Once straight and squared, anchor leading edges and every 3-5 cells with stakes, sandbags or a shovel full of infill material.
- Deploy adjacent panels and connect them to anchored panels.
- Repeat expansion process.

Panel Connections

- Every cell along the width and length must be connected to adjacent panels.
- Use cable locks or with a pneumatic stapler and staples to connect adjacent panels.

Panel Anchoring

- The panels are anchored once expanded, aligned and in place.
- The panels are anchored around the perimeter every 3-5 cells.
- Internal anchoring is not required.

Infill Placement

- If the GeoCell panels are deployed above grade, create a ramp of infill material in front of the expanded cells to prevent crushing during filling.
- After the ramp is in place, trucks can dump infill near the leading edge.
- Using a front-end loader push the mound of infill material on to the empty cells. Push from the top of the pile never from the bottom.
- Do not drive over empty cells.
- Overfill the GeoCells by no more than 1 to 2 inches for settlement allowance.

Compaction

- Do NOT use a vibratory roller- Vibration can dislodge aggregate from cells and reduce interlock.
- Use a static smooth drum roller (**important NO vibration**).

Surface Layer

- Paved Applications- Place 2-3 inches of base course prior to the asphalt to insulate the HDPE GeoCells.
- Unpaved Applications- Finish with a 1-2 inch over the compacted GeoCells.

Quality Control

- Remove wrinkles from separation layer.
- Verify proper separation layer overlaps based on CBR.
- Ensure cells fully expanded and anchored prior to infill.
- Confirm infill material meets design specifications.

Maintenance

- Inspect periodically after heavy traffic or storms.
- If GeoCells silhouette shows, add infill to restore cover.