



## Installation Guide

The TYPAR GEOCELL GS system consists of a geotextile material in a honeycomb structure into which virgin or native infill materials may be placed to enhance load support, slope protection and channel reinforcement. The complete system includes GEOCELL panels, infill materials and some or all of the following components: geotextiles, geogrids, anchoring devices, geomembrane, geocomposite drainage materials and surface treatments.

### Installation Method

#### INSTALLATION OF LOAD SUPPORT SYSTEMS

##### Subgrade Preparation

1. Excavate and shape foundation soils.
2. Ensure foundation soil meets minimum strength requirements through proof rolling or other conventional method. If unacceptable foundation soils are encountered, excavate and replace with suitable quality material.

##### Separation Layer and Base Materials Installation

3. When separation between subgrade soil and infill material is required, place TYPAR 3401G AASHTO Class 3 Geotextile over subgrade.
4. If additional base materials or engineered soils are required between separation geotextile and TYPAR GEOCELL GS, install the appropriate depth and compact to a minimum 95 percent Standard Proctor.

##### TYPAR GEOCELL GS Panel Placement and Connection

5. Position and expand TYPAR GEOCELL GS panels to the appropriate dimensions. Hold individual panels in their expanded positions with rebar J hook fixing pins or wooden stakes.
6. Confirm each TYPAR GEOCELL GS panel is expanded uniformly and correctly aligned. Nest panels along each joint to ensure adjacent TYPAR GEOCELL GS panels are flush at joint and adjoining cells are fully anchored.

7. Install rebar fixing pins or wooden stakes along the joining of each panel every other cell to hold TYPAR GEOCELL GS panels stable during infill. Alternate the installation of rebar fixing pins or wooden stakes to ensure each panel is stable.

##### Exposed Aggregate or Engineered Infill

8. Fill TYPAR GEOCELL GS with specified aggregate material progressively from front to back. Do not use an infill material with particle sizes greater than 3 inches.
9. Overfill cells with aggregate infill material. Limit the drop height of infill material to 3 feet (1 meter) to avoid displacement of the cell wall.
10. Overfill cells to a depth of approximately 2 inches (50mm) and level for exposed aggregate surfaces. Maintain the 2 inch wear surface over TYPAR GEOCELL GS panels to prevent wear to the cell walls.
11. Compact infill to a minimum of 95 percent Standard Proctor.

##### Base Stabilization

12. Overfill TYPAR GEOCELL GS to a depth of 1 inch and compact to a minimum of 95 percent Standard Proctor.
13. The wear surface shall consist of asphalt/concrete/paver stones/other as specified in the contract documents. Install per engineer's specifications.

#### APPLICATIONS



Slope Protection



Channel Protection



Load Support



Fixing Pins

## INSTALLATION OF SLOPE AND CHANNEL PROTECTION SYSTEMS

### Subgrade Preparation:

1. Excavate or fill foundation soils to align top of TYPAR GEOCELL GS panels flush with or slightly lower than adjacent surface or final grade.
2. Install TYPAR 3401G geotextile underlayer on prepared surfaces.
3. If required, install geomembrane underlayer on prepared surfaces.

### TYPAR GEOCELL GS Panel Anchorage

4. Anchorage with Rebar J Hooks (No Crest Trench.)
  - a. Position collapsed TYPAR GEOCELL GS panels at crest of slope.
  - b. Drive the rebar J hooks at the crest of the slope to secure the TYPAR GEOCELL GS panels in place and allow expansion of the cellular confinement system into position.
  - c. After the TYPAR GEOCELL GS panels are expanded as desired, drive the rebar J hooks with the arm of the hook over the cell wall and flush with top of panel.
  - d. Anchor TYPAR GEOCELL GS with J hooks in each cell around the perimeter and every square yard.

### TYPAR GEOCELL GS Placement

10. Place compressed TYPAR GEOCELL GS panels at crest of slope and expand each panel down slope. Ensure each panel is expanded uniformly to required dimensions.
11. Correctly align outer cells of each layer. Interleaf or overlap edges of adjacent Panels in each layer to nest connections. Verify each panel is level and flush with adjacent panel(s).

### Infill Material

12. Place infill in expanded cells with suitable material handling equipment, such as a backhoe, front-end loader, conveyor, or crane-mounted skip.
13. Limit drop height to a maximum of 3 feet (1 m) to avoid damage or displacement of the cell walls.
14. Fill TYPAR GEOCELL GS panels from crest of slope to toe..
15. Infill material shall be comprised of particle sizes no greater than 3", unfrozen, and free-flowing when placed into the TYPAR GEOCELL GS Panels.
16. Compact infill material per engineer's specification.
17. Ensure the infill material remains flush with the TYPAR GEOCELL GS cell walls after compaction.

## Product Selector:

Product	Panel Size	Cell Diameter	Cell Depth	Weight	Material	Application Method
TYPAR GEOCELL GS 250/100	16.4' x 23'	9.8"	4"	37.5 lbs	Non-woven PP/PE	Pedestrian/Light Vehicle Load Support and Slope Protection
TYPAR GEOCELL GS 250/150	16.4' x 23'	9.8"	6"	55 lbs	Non-woven PP/PE	Light Vehicle Load Support and Slope Protection
TYPAR GEOCELL GS 350/100	16.4' x 23'	13.8"	4"	24 lbs	Non-woven PP/PE	Slope Protection
TYPAR GEOCELL GS 350/150	16.4' x 23'	13.8"	6"	37.5 lbs	Non-woven PP/PE	Slope Protection
TYPAR GEOCELL GS 220/200	20' x 10'	8.7"	8"	44 lbs	Non-woven PP/PE	Heavy Vehicles Load Support

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