BaseCore™

Geocell

The BaseCore™ geosynthetic cellular confinement system is a matrix of lightweight, expandable and flexible thermoplastic strips that are ultrasonically bonded to form a strong, dimensionally stable and inert honeycomb structure.

Forms a Long Lasting Structural Barrier

BaseCore is fabricated from a High Density Polyethylene (HDPE). The cell walls are perforated creating permeable walls to allow water to drain through the system.

When filled with granular materials, the system creates a three dimensional erosion barrier and structural bridge that uniformly distributes weight-bearing loads. The cellular nature of BaseCore enhances drainage and prevents build- up of hydrostatic pressure.

Advantages

- Provides cost effective, long-term slope and channel protection and stabilization
- Ease in transportation and on site handling due to collapsible cells
- Rapid and simple installation conforms to most terrain profiles
- Ultrasonic welding of cell joints ensures maximum strength
- Easily dismantled and subsequently re-used
- Withstands high weight bearing loads
- Resistant to biological attack and a wide range of soil borne chemicals

Easily Dismantled and Re-used

Suitable for the construction of temporary site access. Once operations are complete the installation can be removed or left in place if a sub-base confinement is required.

The 4 main applications include:

1. Earth Retention

- Earth walls

2. Load Support

- Roadways & Verges
- Pathways
- Railway bases

3. Slope Protection

- Vegetative slopes
- Road-side banks
- Embankments

4. Channel Protection

- Embankment walls
- Waterway channels

Earth Retention 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 geotextile over subgrade.
4. If additional base materials or engineered soils are required between separation geotextile and BaseCore, install the appropriate depth and compact to a minimum 95 percent Standard Proctor or 90-92 percent Modified Proctor test - dependent upon locale and soil conditions.

BaseCore Panel Placement and Connection

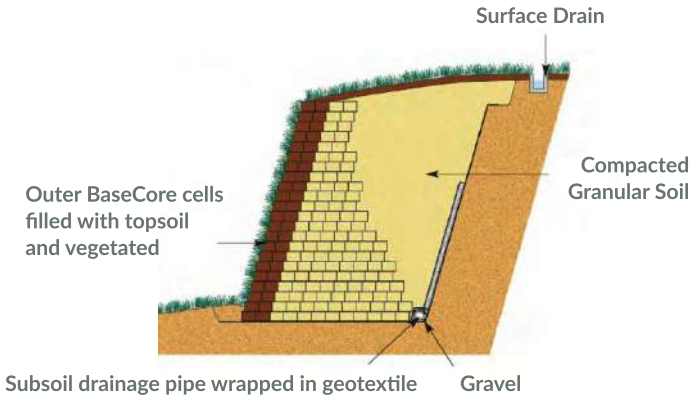
5. Position and expand BaseCore panels to the appropriate dimensions. Hold individual panels in their expanded positions with rebar J-pins or wooden stakes. Join panels using traditional stapling methods or connecting studs.
6. Confirm each BaseCore panel is expanded uniformly and correctly aligned. Nest panels along each joint to ensure adjacent BaseCore panels are flush at joint and adjoining cells are fully anchored. Alternate the installation of rebar J- pins or wooden stakes to ensure each panel is stable.

Exposed Aggregate or Engineered Infill

7. Fill BaseCore with specified aggregate material progressively from front to back. Be sure to use an infill material with particle sizes appropriate for the specified depth of the BaseCore.
8. For vegetative walls fill inner cells progressively with aggregate infill material. Limit the drop height of infill material to 1m to avoid displacement of the cell wall. Fill outer cells with soil to allow vegetation to grow.
9. Overfill cells to allow for layered compaction, as the structure forms. Ensure to stagger rebar J-Pins on each layer. 10. Compact infill to a minimum of 95 percent Standard Proctor or 90-92 percent Modified Proctor test.

Connecting Studs can be used to join panels as alternative to traditional stapling methods, reducing labour costs and install time.

BaseCore can be used to retain infill in gravity retaining and free standing walls, embankments and barriers. The shear strength of the infill is enhanced by confining material within each cell. When installed in layers, BaseCore forms an integrated structural mass resisting lateral pressure and movement. BaseCore is easily dismantled and may be subsequently re-used.



BaseCore™

Geocell Load Support

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 geotextile over subgrade.
4. If additional base materials or engineered soils are required between separation geotextile and BaseCore, install the appropriate depth and compact to a minimum 95 percent Standard Proctor or 90-92 percent Modified Proctor test.

BaseCore™ Panel Placement and Connection

5. Position and expand BaseCore panels to the appropriate dimensions. Hold individual panels in their expanded positions with rebar and BaseCaps or wooden stakes. Join panels using traditional stapling methods or connecting studs.
6. Confirm each BaseCore panel is expanded uniformly and correctly aligned. Nest panels along each joint to ensure adjacent BaseCore panels are flush at joint and adjoining cells are fully anchored. Alternate the installation of rebar and BaseCaps to ensure each panel is stable.
7. Install rebar fixing along the joint of each panel in every other perimeter cell to hold the BaseCore panels stable during infill. Alternate the installation of rebar BaseCaps to ensure each panel is stable.

Exposed Aggregate or Engineered Infill

8. Fill BaseCore with specified aggregate material progressively from front to back.
9. Overfill cells with aggregate infill material. Limit the drop height of infill material to 1m to avoid displacement of the cell wall.
10. Overfill cells to a depth of approximately 2” and level for exposed aggregate surfaces. Maintain the 2’ wear surface over BaseCore panels to prevent wear to the cell walls.
11. Compact infill to a minimum of 95 percent

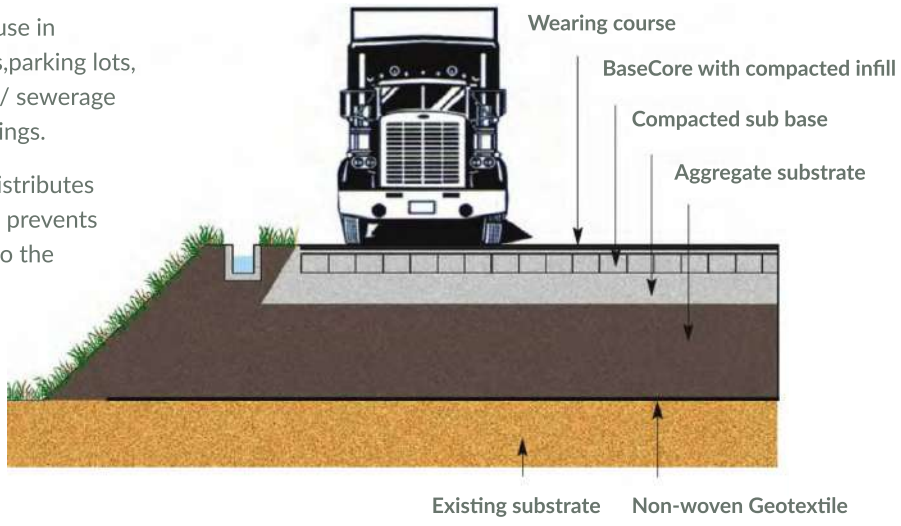
Base Stabilisation

12. Overfill BaseCore to a depth of 25mm and compact to a minimum of 95 percent.

13. The wearing course may consist of asphalt/concrete/paver stones/gravel or grass stabilizer or other as specified. Install per engineer’s specifications.

BaseCore has application for use in driveways, maintenance roads,parking lots, cart paths, walkways, pipeline/ sewerage supports and in channel crossings.

The cell structure uniformly distributes high weight bearing loads and prevents the infill from being forced into the substrate below resulting in deformations and potholes.



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Geocell Slope Protection

Slope Protection Systems

Subgrade Preparation

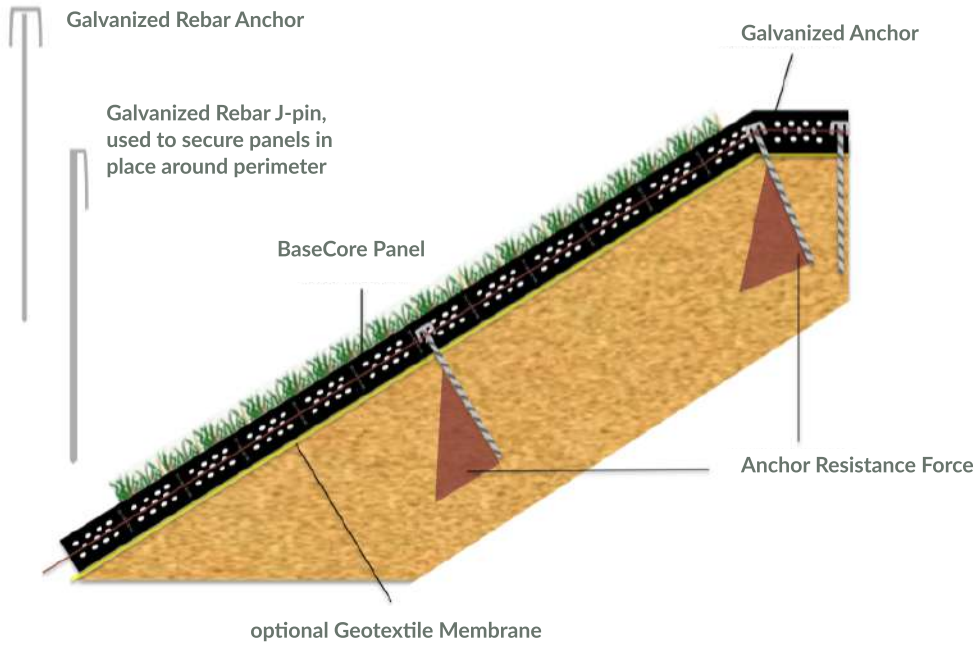
1. Excavate and shape foundation soils.
2. Install an optional geotextile underlayer on prepared surfaces.
3. Calculate the length of the slope in order to determine the number of panels required

BaseCore Panel Placement

4. The number of securing anchors used will depend on the gradient of the slope (i.e. the steeper the slope the more anchors and tendons required.)
5. Position collapsed BaseCore panels at crest of slope. Secure at the crest of the slope with galvanized anchors.
6. Secure subsequent panel/s with connectors
7. Drive a rebar BaseClip through every perimeter cell along the crest of the slope to secure the top edge of the BaseCore panels in place.
8. Begin to expand the panel/s down the slope, securing the panels as you go with rebar (according to suggested laying pattern) in their fully expanded position.

Add Infill Material:

1. Infill expanded panels with chosen material working from the bottom of the slope up towards the crest. *(For less exposed slopes seeded top-soil is suggested, adding small shrubs will give improved protection)*
2. *Compact infill material per engineer's specification.*



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Geocell Channel Protection

Channel Protection Systems

Subgrade Preparation:

1. Excavate and shape foundation.
2. Install a geotextile underlayer on prepared surfaces.
3. If required, install geogrid underlayer on prepared surfaces.

GD geocell Panel Placement and Anchorage

4. Subject to site requirements, generally follow the slope protection installation method or earth retention installation method.

Infill Material:

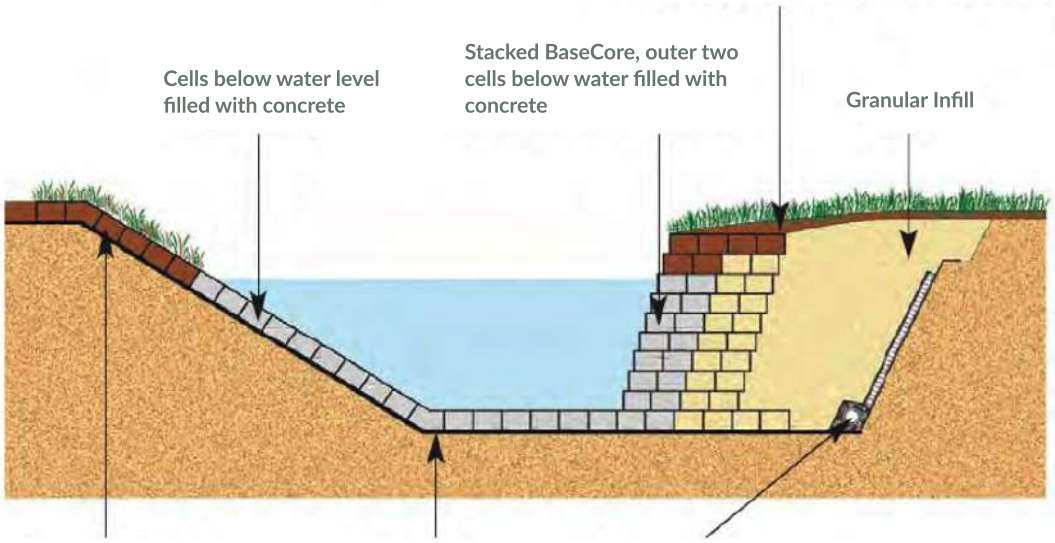
5. Place chosen infill material in expanded cells
6. Limit drop height to a maximum of 3 feet to avoid damage or displacement of the cell walls.
7. Compact infill material per engineer's specification.

*Due to the varying nature of channel protection projects a detailed engineered specifications are required.

Infill materials, subject to site conditions, include:

- Top soil for low to moderate and intermittent flow conditions.
- Granular materials including gravel and concrete for channels subject to severe hydraulic and mechanical stresses.

BaseCore can be used for channel and shoreline protection and on scour aprons, boat ramps and spillways. BaseCore avoids the need to install costly load support structures.



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Geocell Specification

Technical Specification	
Cell Dimension	8 " x 7.5 " to custom sizes available
Cell Heights	3" to 8” custom
Thickness	2.6mm
Tensile Strength	19.5MPa
Seam Weld Strength	2175 N
Panel Size	In-Stock and Custom Sizes Available

Please note that the information above is given as a guide only. All sizes and weights are nominal figures and may vary to what is published. BaseCore will not be liable for damage caused by incorrect installation of this product. This guide is provided as an aid to assessing the mechanical stabilization requirements in commonly encountered site conditions. BaseCore accepts no responsibility for any loss or damage resulting from the use of this guide.

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