

# Strataweb™

## Slope Installation Guide



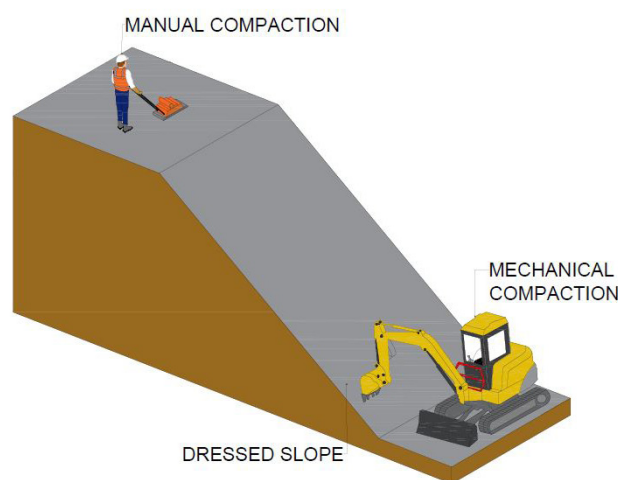
StrataWeb™ is a three-dimensional cellular confinement system manufactured from textured and perforated high-density polyethylene (HDPE) strips that are ultrasonically welded together to create a strong, lightweight expandable panel.

StrataWeb™ is an excellent solution for erosion control and protection of slopes, channels, river banks, embankments, canals and landfills.

StrataWeb™ can be filled with topsoil and vegetation, granular material or concrete, based on the specific requirements of each project.

### Site Preparation

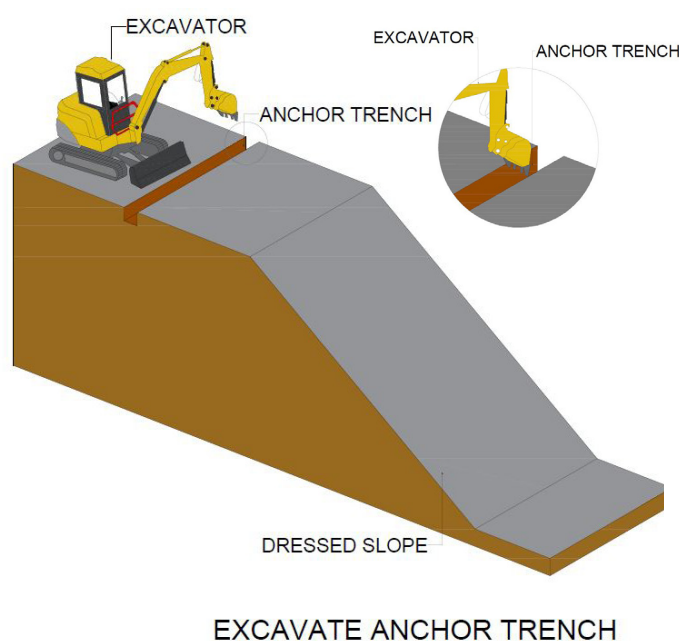
- Prepare the site by removing all debris and any other obstructions from the area where the StrataWeb™ cellular confinement system is to be placed.
- Stability of the subgrade soil is very important; hence properly rolling and compaction is essential. Standard procedures for compaction include - overfilling the slope and excavating the excess material after settlement, rolling with a hand roller pulled either manually or mechanically through a tractor / JCB etc., mechanical tamping with the bucket of a JCB / excavator, hand tamping by labor force.



### SCARIFYING, LEVELLING AND COMPACTION

### Crest Anchorage

- Excavate the anchor trenches, according to specification and drawings of the project. To ensure a minimum distance of 600mm between the trench and slope edge to prevent any sliding.
- Crest anchorage size and shape to be determined based on the site investigation and consultation with the site engineer.
- StrataWeb™ is secured to a buried pipe, anchor blocks or staked to the ground with pins as specified in the drawings.
- Special attention should be paid to prevent water flow into the anchor trench or slope.
- It is necessary to ensure that seepage (if any) is prevented from the surface to the crest anchorage.



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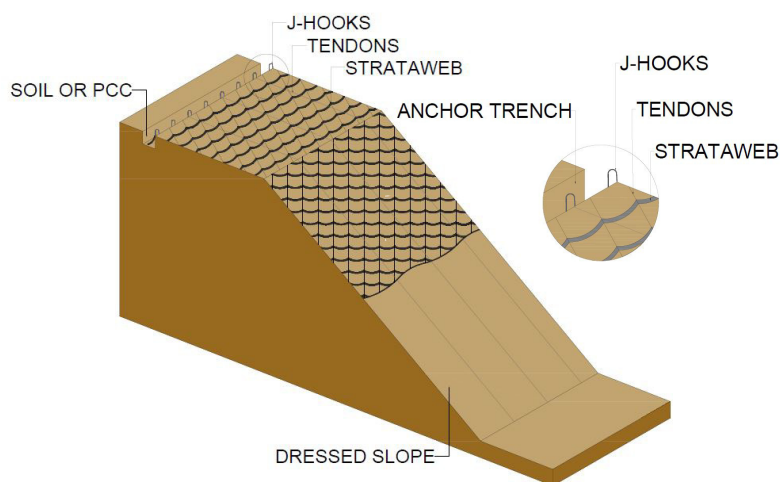
### Geotextile Separation Layer

- If the geotextile is required as per site conditions (e.g above Geomembrane, GCL) then to install the specified Geotextile as per manufacturers specification.
- Place the StrataWeb™ on top of the Geotextile.
- Secure StrataWeb™ with cable ties to the Geotextile to maintain the integrity of the system StrataWeb™ - Geotextile.

### Fixings

Different types of fixings can be used, depending on the type of soil and the slope surface. Fixings are an integral part of the slope protection system.

- J-Hooks: J-shaped steel reinforcement bar pins (8-10mm diameter, min. 3x the depth of the StrataWeb™), inserted at intervals at the crest and toe of the slope.
- The pinning pattern depends on the height and angle of the slope. Please refer to the pinning pattern guide or check with our technical department for the pinning pattern to use.
- Tendons: High strength polymeric cables which provide additional support in situations with steep slopes, where J-Hooks are prohibited or where more than one panel is required to cover the length of the slope.
- Cable ties: Connect StrataWeb™ panels together or connect StrataWeb™ to a Geotextile.
- Staple Pins: Stainless steel pins fixed, using a pneumatic gun, at the connection between two StrataWeb™ panels.



PLACE STRATAWEB AND SECURE WITH J-HOOKS

### Drainage Arrangement

- A suitable drainage arrangement, designed in consultation with the engineer-in-charge, is essential at the crest of the slope to inhibit runoff/streamline flow passing over the StrataWeb™ cells before vegetation is secure.
- Weepholes may be introduced for concrete infill slopes, generally recommended at intervals of 5m horizontally and 3m vertically, along the slope length.
- Subsurface drains including horizontal drains and drainage blankets should be included in the design of applications with high water tables.
- An inadequate drainage arrangement, which permits the flow of water over or under the StrataWeb™ cells, could cause problems of the slope protection system.
- In the case of soil infilled slopes, drainage chutes may be required at regular intervals, subject to consultation with the engineer-in-charge.
- All conceivable flow paths which could affect the slope should be considered and accounted for at design stage.

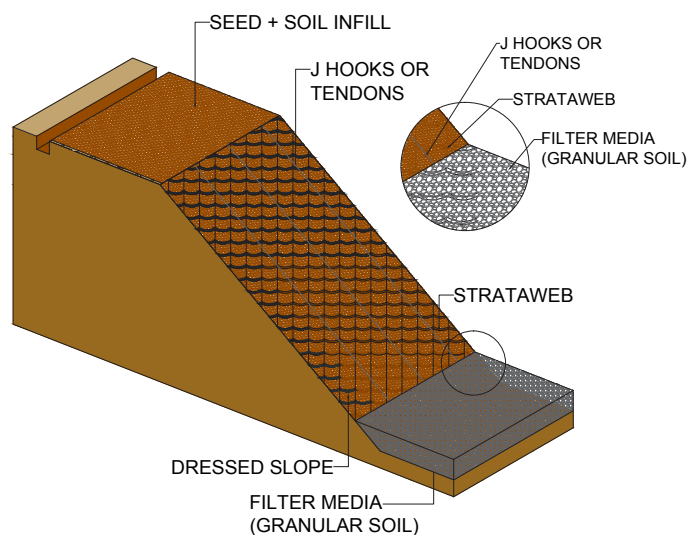
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### Toe Protection System

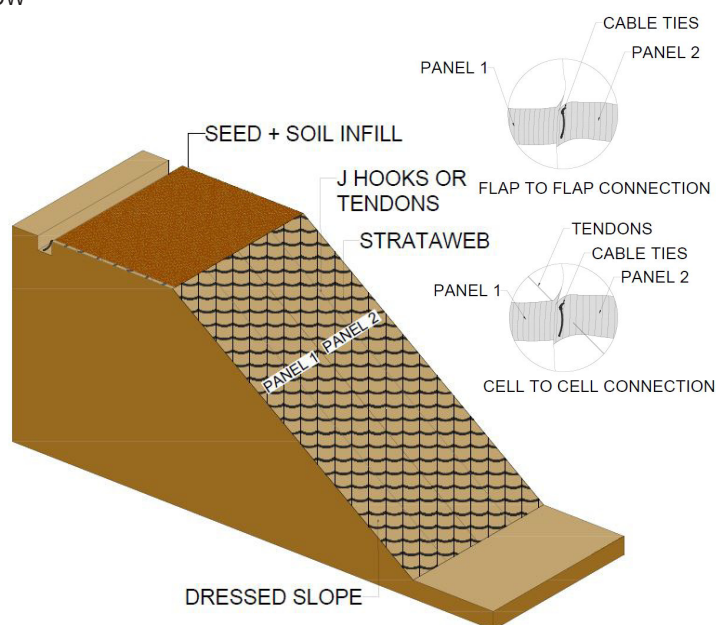
- Toe drain is necessary to ensure the stability of the slope by providing end bearing support.
- Scour at the toe can destabilise the entire slope protection system. To protect against scour, the StrataWeb™ is secured in a 300 x 300mm trench at the toe.
- When groundwater level is high the toe portion of the slope is covered with filter media to protect scouring of soils and prevent StrataWeb™ from becoming exposed.



TOE PROTECTION - FILTER MEDIA

### Installation of StrataWeb™ sections

- Surface should be scarified and levelled as per the guidelines mentioned in the 'Site Preparation' section.
- Partially install J-hooks leaving an extending length of the cell depth plus approximately 50mm, along the top edge of the area in which the StrataWeb™ geocells are to be installed (or in the anchor trench). A string or chalk line may be used to align staking locations and borders.
- StrataWeb™ sections should be stretched beyond the designed length then allow to settle back to the designed length. Set the end cells of the StrataWeb™ sections over the previously installed stakes and complete installation of the J-hooks flush with or slightly below cell walls.
- Adjoining StrataWeb™ sections must be levelled and flushed with each other. Overlap the sides of the StrataWeb™ sections and butt the ends together.
- Lock adjoining sections to each other using pneumatic stapler or other means as required by the job application.
- Install the balance of the J-hooks as required by the job specifications.



STRATAWEB CONNECTIONS

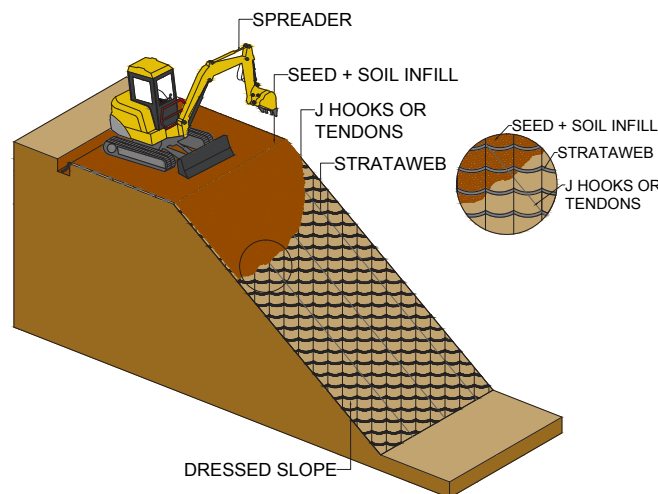
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### Placement of Infill

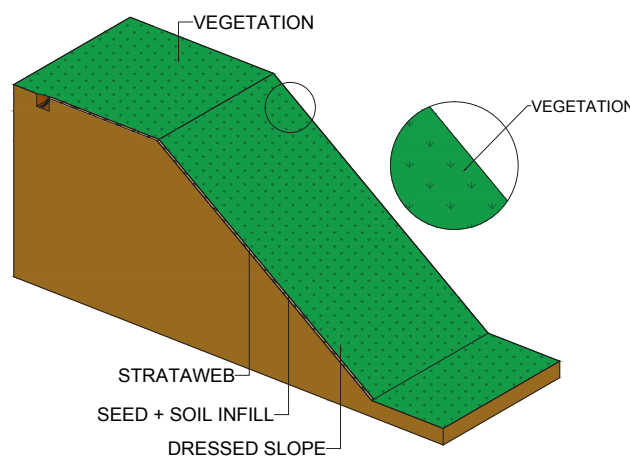
- When the StrataWeb™ has been properly laid in place, the system should be infilled using the materials specified in the job specifications.
- To prevent possible damage to the system, limit the drop height of the infill to no more than 1m.
- Infill should be delivered to the StrataWeb™ from the top of the slope or channel to the base using a front-load loader, backhoe, bucket excavator or conveyor.



### Soil/Granular Infill

- While using sand, granular or top soil fills, overfill the StrataWeb™ sections by 25mm to 50mm to allow for settling and compaction.
- Sand and granular fills should be blade compacted to the top of the cells / topsoils fills should be compacted with the loader or backhoe bucket or with tamper plate.
- Filling shall be done in stages directing from the top to the bottom.
- Selection of type of vegetation shall be in accordance with local specialist.
- Regular watering is required for the germination of the seeds.
- Minimum of 4 months duration shall be required for the complete vegetation growth.

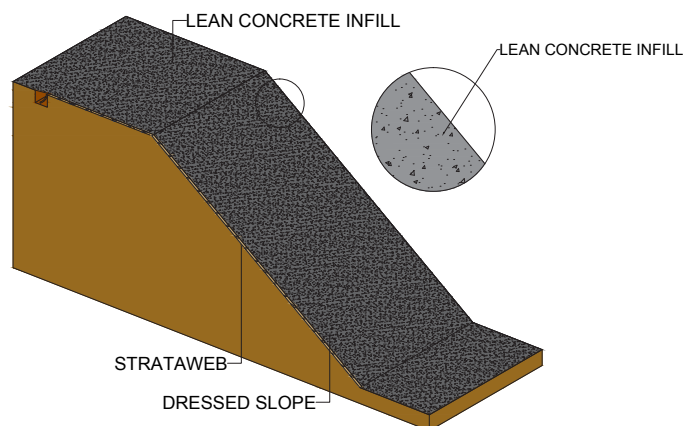
### SPREADER FOR UNIFORM PLACEMENT



### VEGETATIVE SOIL INFILL

### Concrete Infill

- When using concrete infill, overfill the StrataWeb™ sections by 10mm to 20mm to allow for settling and compaction and to avoid the exposure of the StrataWeb™ to direct sunlight.
- It is required to maintain the flow ability of concrete according to BSEN 12350-5.
- After concrete infill, surface dressing should be carried out for neat engineering aesthetic look.



### LEAN CONCRETE INFILL



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### Pinning Patterns:

