MIRAFI®

Innovative Geosynthetics

Geosynthetics

for landscape hardscaping applications

REINFORCED SOIL ENGINEERING

Ten Cate Nicolon

Interlocking Concrete Pavers were developed

in the Netherlands during the 1940's as a replacement for clay brick streets. The technology spread throughout Europe and reached North America in the 1970's. Geosynthetics are used to preserve the load bearing capacity of the soil and provide filtration from stormwater runoff.

Separation is the primary geosynthetic function in systems with firm subgrades (CBR > 3). In weaker subgrades, reinforcement geosynthetics are used to stabilize the system particularly in wet, saturated conditions.

Separation is the prevention of subgrade soil migration into an aggregate base (or subbase), and prevention of the aggregate base (or subbase) migration into the subgrade.

Base Separation

Of critical importance to the success of the Interlocking Concrete Pavement is the stabilization of the base material.

Woven and nonwoven geotextiles are recommended in most situations to preserve the load bearing capacity of the base over a greater length of time and provide filtration and drainage for permeable paver systems.

Filtration

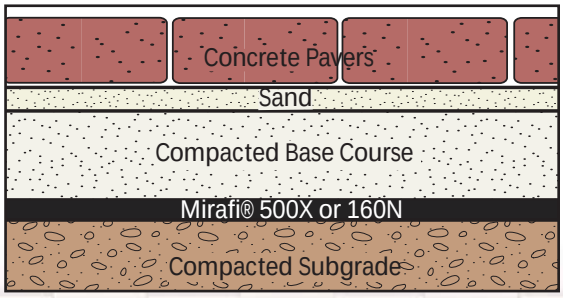
Filtration is restricting the movement of soil particles, while allowing water to move from the filtered soil to the adjacent coarser soil.

Filtration geotextiles also provide separation by preventing movement of the subsoil, but allowing water to pass throughout the system.

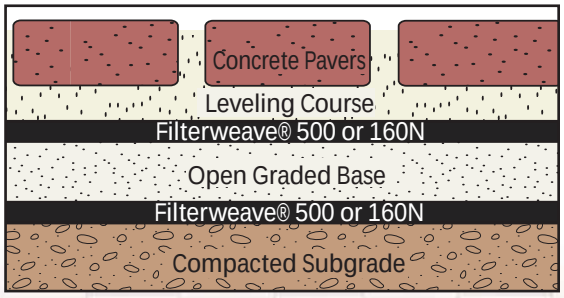
Woven and nonwoven geotextiles are recommended in permeable paver applications to provide both separation and filtration. Monofilament woven geotextiles provide long term filtration and separation allowing permeable pavers to drain storm water run-off.

Benefits of Geosynthetics used with Concrete Pavers

- Reduce the intensity of stress on the subgrade
- Reduce the depth of excavation required for removal of unsuitable subgrade materials
- Minimize disturbance of the subgrade during construction
- Minimize the differential settlement of the pavement
- Reduce the likelihood of rutting
- Protective membrane to provide scuff protection during installation



Standard Paver Cross Section



Permeable Paver Cross Section

Filterweave® 500 for Separation & Filtration

- UV Stabilized Woven Polypropylene
- Meets AASHTO M288-00 Class 1,2 & 3 Separation & Drainage Requirements
- Use in permeable paver applications

Mirafi® 500X for Separation

- UV Stabilized Woven Polypropylene
- Meets AASHTO M288-00 Class 3 Separation Requirements
- Excellent Separation properties
- Use in standard paver applications

Segmental Retaining Walls were developed in the 1960s and became prominent in the mid-1980s. SRWs incorporate the principals of soil reinforcement which began over 3,000 years ago.

Benefits of Geosynthetics used with Segmental Retaining Walls

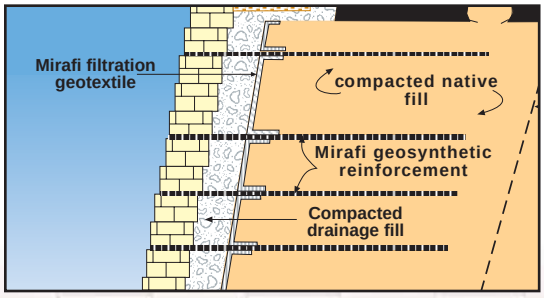
- Increases the wall height that can be constructed
- Allows greater surcharge load on top of the wall
- Drainage geotextiles retain fines while allowing water to filter out
- Reduces staining of block face

Soil Reinforcement is the addition of a structural or load carrying geogrid to transfer the load from the soil to the geogrid.

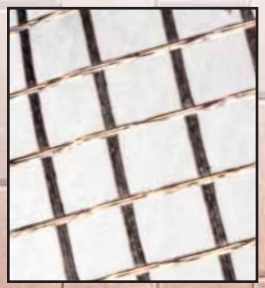
The stability of a reinforced segmental retaining wall is dependent on the integrity of the geogrid reinforcement. The use of geogrids is typically required if the wall height exceeds three (3) feet in height.

Filtration

Geotextiles are commonly used for separation and filtration in SRW applications. Nonwoven and woven geotextiles filter soil particles, and prevent soil staining on the wall face.

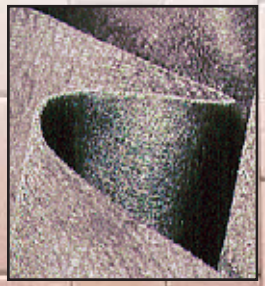


Retaining Wall Cross Section



Miragrid® 2XT for Reinforcement

- UV Stabilized Polyester Grid
- High tensile strength & soil interaction
- Excellent durability & long term performance
- Use in SRW reinforcement up to 6 ft high



Mirafi® 140N for Filtration & Drainage

- UV Stabilized Nonwoven Polypropylene
- Meets AASHTO M288-00 Class 3 Drainage Requirements
- Excellent Drainage Properties

Miragrid® 2XT
Geogrids for Reinforcement

Mirafi® 500X
Woven Slit Film for Separation

Mirafi® 140N
Nonwoven for Filtration and Drainage

Now available in point-of-purchase display packaging or in commercial size rolls.

For more information, ask your Mirafi representative: 888-795-0808.

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