SOIL RETENTION
PRODUCTS INC.

ENVIROFLEX® ARTICULATED CONCRETE BLOCK (ACB) SYSTEM
- OPERATION AND MAINTENANCE MANUAL -

I SYSTEM OPERATION

A. The ***Enviroflex***® system is intended to function as a non- to low-maintenance scour protection system that preserves the underlying subgrade and protects it from erosion.

B. The bare system (exposed block with open cells) may infill with sediment and vegetation growth similar to a natural channel bottom depending upon the surrounding environment and upstream conditions.

C. Designed high-flow conditions may remove deposited sediment and vegetation growth and re-expose the bare block product.

D. Multiple cycles of deposition, vegetation growth and sediment/vegetation removal may occur in a cyclical condition in riverine environments.

E. In basin environments, sediment and excessive vegetation removal may be necessary atop the product to maintain basin capacities and design intents.

II GENERAL MAINTENANCE

A. ***Enviroflex***® System Inspection

1. The ***Enviroflex***® System(s) maintenance shall be the responsibility of the Owner of the site.

2. Owner's Representative shall make at least two (2) general inspections of the premises per year to check for damaged or broken block surfaces, perimeter confinement, sediment depositions (if applicable) and excessive larger size vegetation growth. Additional inspections should be made after extreme weather events.

3. The ultimate goal of the general inspection is to ensure that the ***Enviroflex***® coverage area is performing as intended and in such a way as to maintain that goal for the life of the project.

B. Vegetation Management

1. Excessive vegetation growth may require removal. Stalk diameters of vegetation growth should not excessively over-grow the open cells of the product. Removal of vegetation should be completed with hand-labor or equipment.

2. Tree growth should not be allowed to take root within the surface of the product. Tree growths should be removed if encountered.

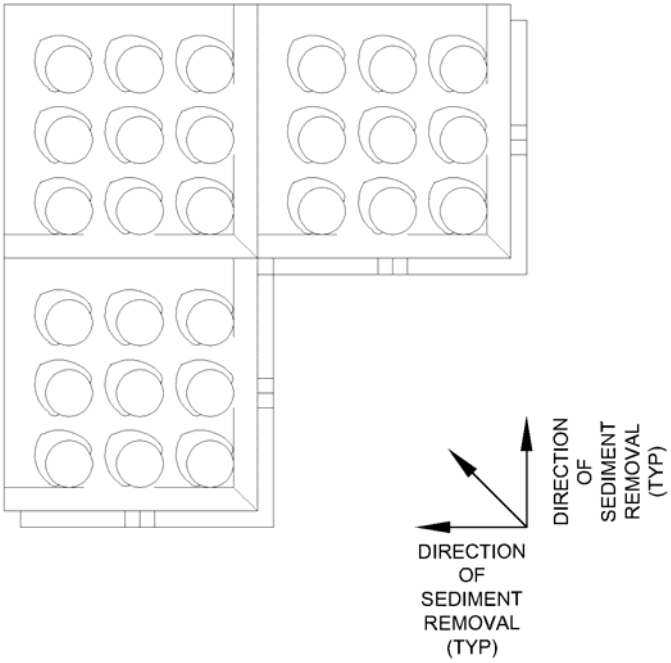
3. Voids generated directly from the removal of plant material can be in-filled or left open and allowed to infill through natural sedimentation.

C. Sediment Removal in Basins and Access Roads:

1. Sediment removal may be necessary atop the product in basin areas and along access roads to maintain basin capacities and design intents as directed by the Owner.

2. Sediment removals should be completed with light-weight track mounted equipment (i.e. skid-steer) with protective rubber cleats on the tracks. Equipment with metal tracks should never be used over ***Enviroflex***® block. Protective rubber gaskets should be used on the leading edge of buckets to avoid scrapping/chipping the product surface.

3. Equipment should scrape the accumulated sediment atop the product in the direction of the tapered block in a manner to not damage or uplift an exposed edge. Verification of the orientation of the product should be done prior to equipment usage. Removal of sediment in the wrong direction (i.e. against the exposed edge of the block) may result in damage to the blocks and overall system.



4. Larger wheeled-equipment is not recommended unless the sub-base/base was designed for heavier traffic loading. Protective boards should be considered atop the product in areas of repeated sharp turning.

D. Repair of Damaged ***Enviroflex***® Blocks:

1. ***Enviroflex***® blocks are fiber-reinforced. A cracked block does not require repair unless any broken piece becomes dislodged from the system creating a void in the surface.

2. Repair of damaged blocks should be completed by removing any loose/broken block pieces and refilling the area with a 4,000-psi concrete mix. Concrete pours should have a minimum width of 6 inches.

3. Larger-sized block repair areas (bigger than 1 full block) may require re-connection with existing pieces, doweling into existing concrete pours or other methods of re-connection. Refer to the ***Enviroflex***® standard block connection details on the website (www.soilretention.com).

E. Removal and Replacement of ***Enviroflex***® Blocks:

1. In case of removal of the system for access underneath, it is recommended that the ***Enviroflex***® blocks be saw-cut and removed. Underlying gravel layers (if incorporated) should be carefully removed to expose filter fabric layer. Filter fabric should be neatly cut to expose underlying subgrade.

2. Only undamaged full or half-sized ***Enviroflex***® block pieces should be used in replacement.

3. Over an approved subgrade, filter fabric should be replaced below the area where the ***Enviroflex***® block is to be replaced. Gravel layer (if incorporated) should be replaced.

4. Replacement of ***Enviroflex***® blocks require re-connection with existing pieces, doweling into existing concrete pours or other methods of re-connection. Refer to the ***Enviroflex***® standard block connection details on the website (www.soilretention.com). Concrete closure pours should have a minimum width of 6 inches and should consist of a minimum 4,000-psi concrete mix.

F. Pest Control:

1. Confinement edges should not be undermined by burrowing animals. Rodent burrows through the surface of the product should also be prohibited.

2. Rodent burrows that have undermined the perimeter confinement edges or gone into the surface of the product through underlying filter fabric should be refilled with a 4,000-psi concrete mix.

3. A vector control program should be implemented if needed.

G. Irrigation Systems:

1. Irrigation systems may be used over the ***Enviroflex***® system as desired. Irrigation system design should consider high water elevations so the system is not compromised in a storm event.

H. Clean Up:

1. All debris resulting from the maintenance operations at the project site should be disposed of in a lawful manner.

III ADDITIONAL INFORMATION

A. ***Enviroflex***® block and system usage details are on our website (www.soilretention.com).

B. Please contact our office with any questions or inquiries at info@soilretention.com or call (760) 966-6090.