Shoreblock® SD is a flexible, interlocking matrix of concrete blocks of uniform size, shape and weight connected by a series of cables which pass longitudinally through preformed ducts in each block. Shoreblock® SD revetment systems combine the favorable aspects of lightweight blankets and meshes, such as porosity, flexibility, vegetation encouragement and habitat enhancement with non-erodible, self-weight and high tractive force resistance of a rigid lining.

Shoreblock® SD has proven to be an aesthetic and functional alternative to rip-rap, poured in place concrete and other heavy-duty, erosion protection systems. Shoreblock® SD is easy to install, therefore, can dramatically reduce overall project costs. More specifically, when compared to other systems, life-cycle costs have been reduced because Shoreblock® SD is a permanent system and saves on subsequent maintenance expenses.

Research and Design

Shoreblock® SD is the most durable, effective and environmentally-friendly erosion control revetment method of fighting severe erosion problems. Shoreblock® SD mats are available in eight foot widths in lengths up to 40 feet. Mats can be joined to achieve greater lengths. Different sizes of Shoreblock® SD are available depending on the severity of the application. In most markets, Articulated Concrete Blocks (ACBs) are competitive in cost to 12” diameter (or greater) rock (or rip-rap) placed in an 18” or greater blanket thickness, are competitive with gabion mattresses and ACBs are typically more economical than poured in place concrete.

ACBs were successfully tested by the U.S. Bureau of Reclamation and U.S. Federal Highway Administration (FHWA-RO-89-199). The Corps of Engineers has used ACBs on numerous designs for both channel and shoreline stability. Comprehensive wave tank testing was evaluated in 1983 at Oregon State University. ACB installations have been performing successfully since 1980.

Shoreblock® SD Design Advantages

- Each block has an open area of up to 20% to allow for superior hydraulic pressure relief and ecologically pleasing vegetative cover.
- Interlocking casing allow greater flexibility through the axes of articulation — conforms better to ground contours and settlement.
- Prefabricated mats offer quick installation, even underwater.
- Tests have shown that the force needed to remove a block from a revegetated cover layer may be equal to 20 times the weight of the block.

Specifications

Fabrication of a Shoreblock® SD mat is accomplished by threading corrosion resistant steel or special synthetic cable in one direction through a series of blocks. Cables are then secured to the mattress with corrosion resistant hardware. Cables are sized to provide a 5 to 1 cable strength to mat weight ratio to ensure safe handling while providing extraordinary strength in the system. Longitudinal cables are looped together at the ends of each row of blocks in the mat assembly for easy handling and anchoring. The open cells of Shoreblock® SD comprise about 20% of the mat area.

Features & Benefits

- DURABILITY: Shoreblock® SD will not suffer loss of function due to chemical degradation, UV degradation, biological degradation, vandalism or aging throughout its design life.
- STABILITY: Shoreblock® SD has the necessary strength characteristics to resist displacement due to imposed traction forces and wave loads and the necessary strength to resist both lateral displacement and vertical uplift.
- ACCEPTABILITY: Shoreblock® SD becomes part of the landscape and the local ecosystem. Its construction is free of hazardous properties, thus offering opportunities for recreation at native grasses are quick to germinate in the red filled cells.
- AFFORDABILITY: The Shoreblock® SD system is engineered to ensure comprehensive project design, and high quality components at 20-50% lower than alternative erosion control methods.