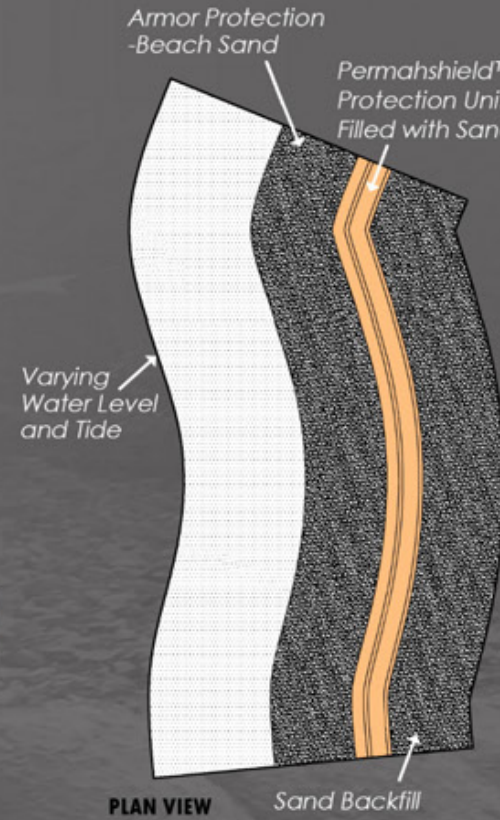
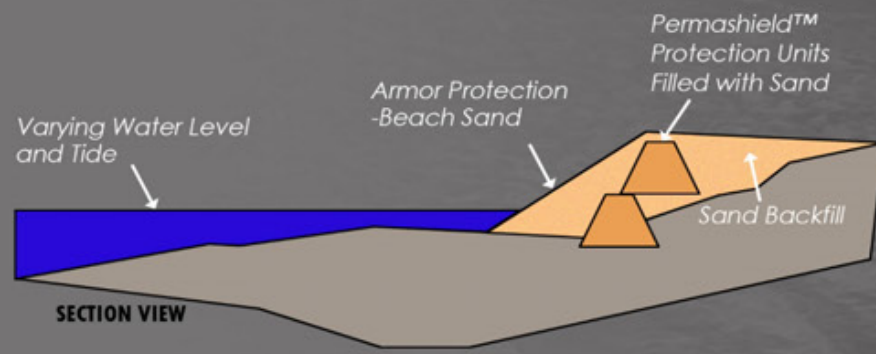


BEACH APPLICATION

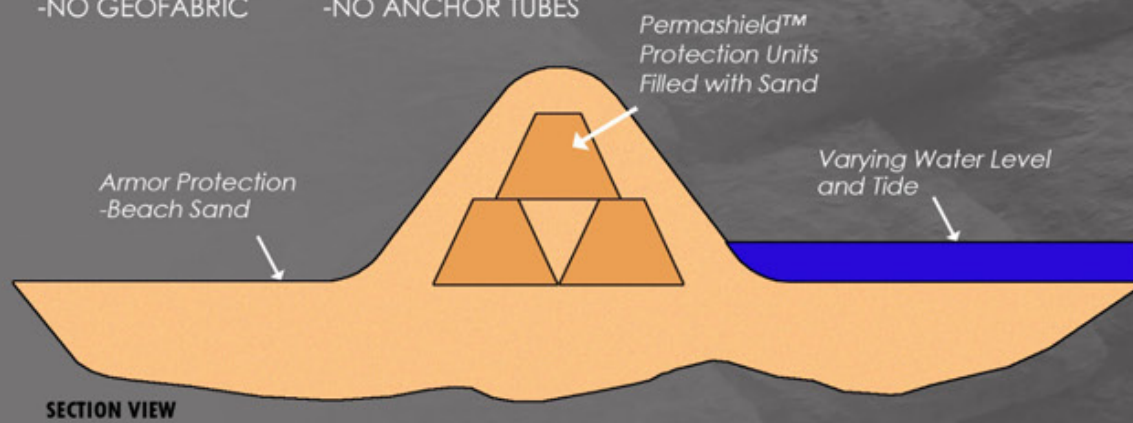
Permashield™ system is a proven, effective solution for general beach and shoreline protection. This system can be filled with onsite beach sand. Whether above or below beach level, Permashield™ will guard against tough erosion caused by high winds and heavy tide movement.



DUNE REINFORCEMENT

Permashield™ system is the ultimate dune reinforcement solution. This proven system has been tested and backed by the Army Corps of Engineers.

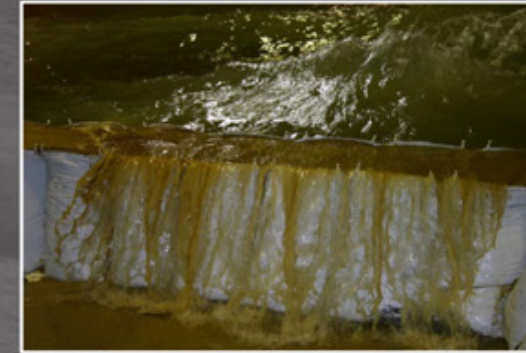
- Quickest installed product on the market
- Virtually impossible to tip and roll
- NO GEOFABRIC
- NO ANCHOR TUBES



USACE ERDC Wave Pool



PermaShield™ system pre-test



Overtopping Test



Overtopping Test Results



Wave Testing



Wave Testing Results



USACE TESTED - USACE APPROVED

PROTECTION FROM NATURE™

PERMASHIELD™

PERMASHIELD™



PROTECTION FROM NATURE™

Call us today to find out what Guardian Retention Systems' products can do for you.



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Brooks, KY 40109



ERECTING THE SYSTEM

Filling the PermaShield™ system is very simple and very quick. The PermaShield™ system is pulled along and prepared using our steel proprietary delivery sled. The sled contains a custom hopper that is filled using a rubber tire loader. The hopper distributes the sand evenly inside the units. As the delivery sled is pulled along, the flood protection system is erected.



SPECIFICATIONS

- SEGMENTS: 50' with 2' Baffle
- MATERIAL: 8oz woven polypropylene coated fabric
- UV Resistance: 70% after 2,000 hours
- TENSILE STRENGTH: 390 LBS x 360 LBS (ASTMD-1682)
- PUNCTURE STRENGTH: >1,000 LBS (ASTMD-751 with 5/16 hemispherical tip)

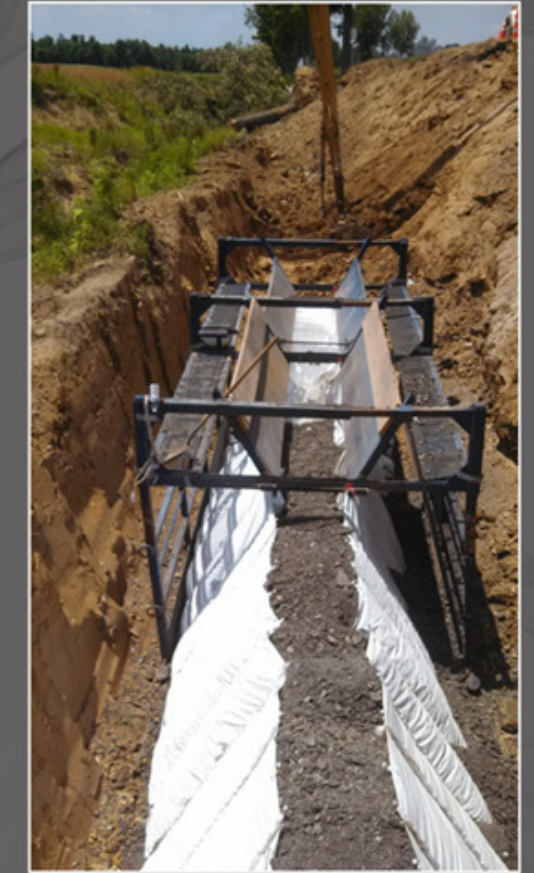
Performance Studies By:
US Army Corps of Engineers
-Tested -Approved



PermaShield™ is the ultimate inner core protection system.

- Beach Protection
- Beach Dune Reinforcement
- Levee Reinforcement
- Bank Shoulder Reinforcement

This unique system will protect your assets from surges



50' IN JUST 10 MINTUES



PermaShield™ has fought the most difficult tropical floods on earth...



In 2011 the United States Army Corps of Engineers conducted a performance study on PermaShield™ at their Engineer Research and Development Center.

This study tested and evaluated PermaShield™ sand filled system used as a flood barrier. At the time of the testing, the company name referred in the study was Landmark Earth Solutions, and the product was Rapid Installment Barrier System (RIBS). Since this study, the evaluated product is now produced and installed exclusively by Guardian Retention Systems, LLC. *Excerpts from the report below:*

"In the research-basin tests, products were tested in a controlled laboratory setting, but under conditions that emulated an impending flood overtopping a levee along a riverbank"

"Construction of a 76-ft barrier took 17.5 one-twelfth the time it took to erect a similar barrier with sandbags"

"The RIBS barrier successfully withstood tests with wave action, debris impact, and overtopping"

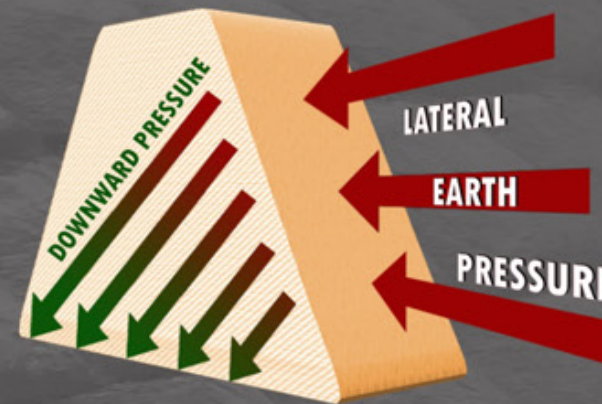
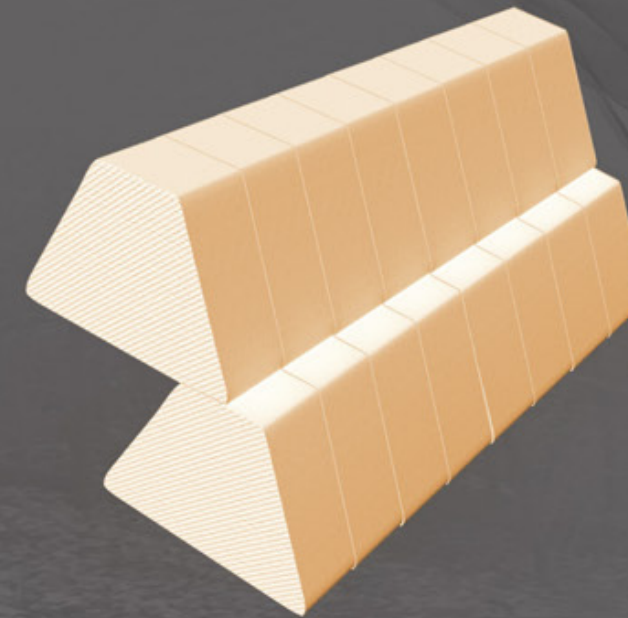
"As tested, the barrier appears to be a cost-effective method for constructing a barrier against flood waters in a fraction of the time it would take to build a sandbag barrier"

"There was no apparent movement of the barrier as the water in the basin rose during any of the tests"

"The two logs were towed into the structure one at a time...Neither log caused any noticeable damage to the structure"

"The barrier was not noticeably affected by the waves and remained stable"

"The RIBS barrier withstood tests with waves, overtopping, and debris impact without failure."



Redirects lateral earth pressure to downward pressure, stabilizing the base and reinforcing the wall



STRONG: Each cell is made from Heavy-Duty '8' ounce woven polypropylene coated fabric secures the material

WATERTIGHT: Trapezoid creates downward 'sealing' pressure

CONTINUOUS CHAIN: PermaShield™ systems come in 50' sections and are joined together via 3,000 LB tensile strength nylon strapping with metal D-Rings

RAPID INSTALLATION: PermaShield™ system produces the quickest custom wall on the market

The PermaShield™ system is the only of its kind shaped as an "Isosceles Trapezoid"

This provides symmetry about the center axis

- Stable base resists sliding
- Stable base resists rotational forces

The non-wire frame of the PermaShield system allows it to take the shape of the ground, which increases the actual footprint

PermaShield™ comes in a versatile range of systems. Each system is compatible with the next, allowing for a combination to reach your desired height.

- Flexible to match unlevel surfaces
- Ability to match any radius