



RAINSTORE3
BY INVISIBLE STRUCTURES™



**A BETTER WAY TO
CONTAIN THE RAIN**



TAKE WATER BY STORM

Rainstore3 is a modular, stackable, underground water containment system. This innovative solution was designed by a landscape architect for subsurface detention basins, retention/harvesting systems, water/rain gardens, green roofs, and sports field drainage. With depths ranging from four inches to almost eight feet, Rainstore3 arrives at the site preassembled for easy, drop-in installation. An impressive 94% void space equates to almost 25 gallons of water storage per unit with no gravel fill required. Plus, this 100% recycled polypropylene (PP) solution is incredibly strong and exceeds H-20 loading capacity.

THE COAST IS CLEAR

Rainstore3 can aid in preserving fresh water sources by preventing rainwater from being washed out to saltwater sources, as it generally does in coastal cities.

WHY UNDERGROUND WATER STORAGE?

By moving water capture underground, not only does it free up usable space above but it prevents erosion, decreases evaporation, reduces run-off, and creates the potential for water re-use. You can even construct a small building structure (like a garage) on top of a Rainstore3 installation.



THE DIFFERENCE BETWEEN DETENTION AND RETENTION

Detention stores the water for a short term, allowing the water to seep into the ground below. Retention stores the water until it's pumped or piped out. A **retention** system can also be used for other liquids that could be stored underground but must be kept from permeating the soil.*

Rainstore3 serves as both an underground detention and retention system. It allows for the temporary storage of stormwater, releasing it gradually to prevent overwhelming drainage systems during heavy rainfall. This helps reduce the risk of flooding and minimizes the impact on downstream areas. Rainstore3 can also function as a harvesting system that allows for storage of stormwater underground to be used when needed or even as a rain garden.



WHY RAINSTORE3?

Created by a landscape architect, Rainstore3 has been the trusted choice for underground water storage since 1999 – and all existing installations are still going strong! Using Invisible Structure's trademark ring-on-grid design, Rainstore3 exceeds H-20 loading, allowing it to support vehicular traffic, lightweight buildings or greenspace. An impressive 94% void space equates to almost 25 gallons of water storage per unit with no gravel fill required.

THE RAINSTORE3 ADVANTAGES



Rainstore3



Modular and Stackable

94%

**94% Void Space With
No Gravel Fill**



Exceeds H2O Loading



No Assembly Required



**Made From 100%
Recycled Plastic**



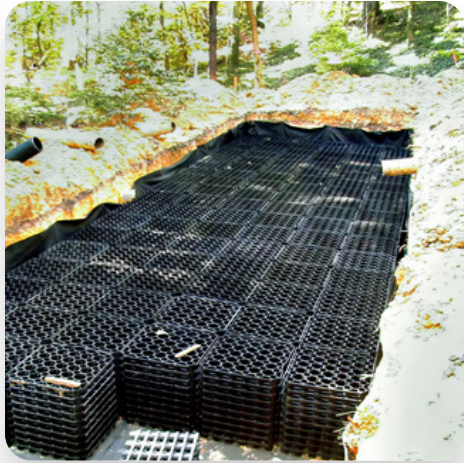
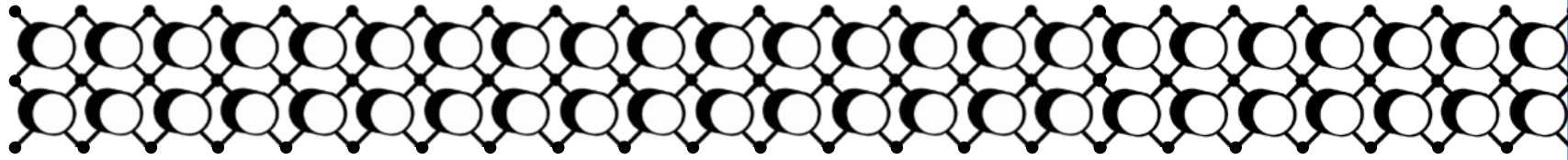
LEED Certified



Lifetime Warranty

**Only inert liquids may be stored using the specifications for retention/harvesting. Chemical-based liquids are subject to approval and may require additional liners.*

APPLICATIONS



Underground Detention Basin



Retention / Harvesting Systems



Water / Rain Gardens



Green Roofs



Sports Field Drainage



Downspout Catch Basins



Liquid Battery Storage



Run-Off Capture & Reuse

IT'S EASY BEING GREEN

Sustainability starts from the ground up. Rainstore3 not only protects the environment, but it also enhances it. For example, Rainstore3 is currently being studied at the National Cathedral in Washington, DC for its remarkably positive effects on the flora, fauna and species habitats at the installation site.

Other benefits include:

- All our products are made from 100% recycled plastic.
- 1.5 million pounds of recycled plastic is used every year (and not sent to a landfill).
- Reduces erosion and soil migration.
- Reduces site disturbance.

**1.5 MILLION
POUNDS**

of recycled plastic is
used every year for
Invisible Structures
products.



Sustainability



RECHARGE

Rainstore3, used as a subsurface detention system, allows exfiltration of stormwater to recharge the ground water supply and natural aquifers. Exfiltration occurs through the bottom and all sides of the chamber. (Side walls can be protected as needed to prevent water saturation in foundation walls.)



WHY WE STAND OUT IN THE RAIN

SHALLOW

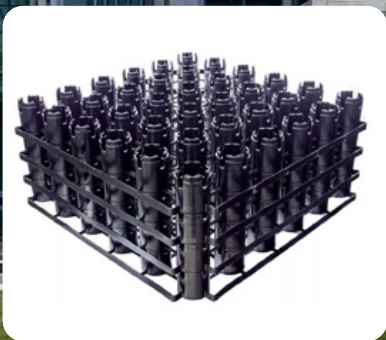
Each Rainstore3 unit is only four inches (0.1 meter) high. Due to its high capacity at shallow depths, Rainstore3 can be used to store water even in areas with extremely high water tables – places arched chambers or corrugated pipe will not work.

STACKED

Rainstore3 is modular and can be stacked up to 24 units high at 7.9 ft (2.4 meters). Rainstore3 uses less of a surface footprint to store more water. Each single stack can hold up to approximately 600 gallons of water at its maximum depth. Arched chambers and corrugated pipe cannot come close.

REGULATE

Rainstore3 can be used as a subsurface retention system to regulate the release of water into a sewer or off-site treatment facility and allows some exfiltration of stormwater. As a harvesting system, it can collect rainwater (gray water) and reuse it for many non-potable applications, such as irrigation.



THE DECK IS STACKED

Due to our trademark design and proprietary blend of 100% recycled PP plastic, our products offer distinct design and installation advantages.

INSTALLATION AND MAINTENANCE

- Rainstore3 cells arrive stacked to the desired height in a box truck on wooden pallets. Two or more workers per stacked unit can unload the cells. Rainstore3 can also be removed from the truck with a powered lift.
- If the product is not to be installed for five or more days after delivery, the Rainstore3 cells MUST be stored out of the sun or frigid temperatures.
- Install with geogrid layers and geotextile fabric.

PRODUCT SIZES

- 40" x 40" x 4" (1 meter x 1 meter x 10 centimeters).
- Cells can be assembled in heights from one unit at 4 inches (10 cm) to 24 units at 7.9 feet (2.4 meters).
- Optimal shipping heights can even eliminate shipping charges.

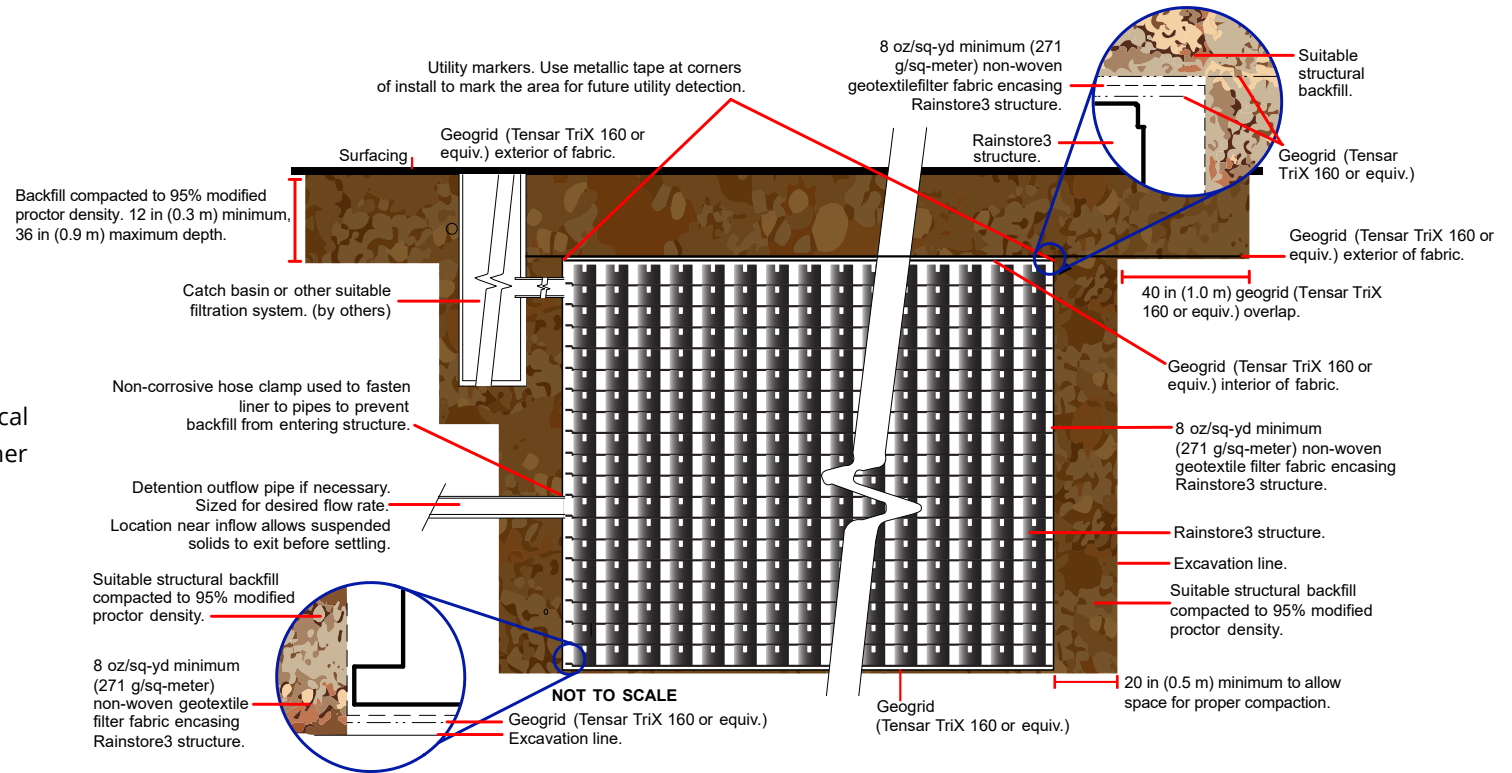


Installation

DESIGN DETAILS

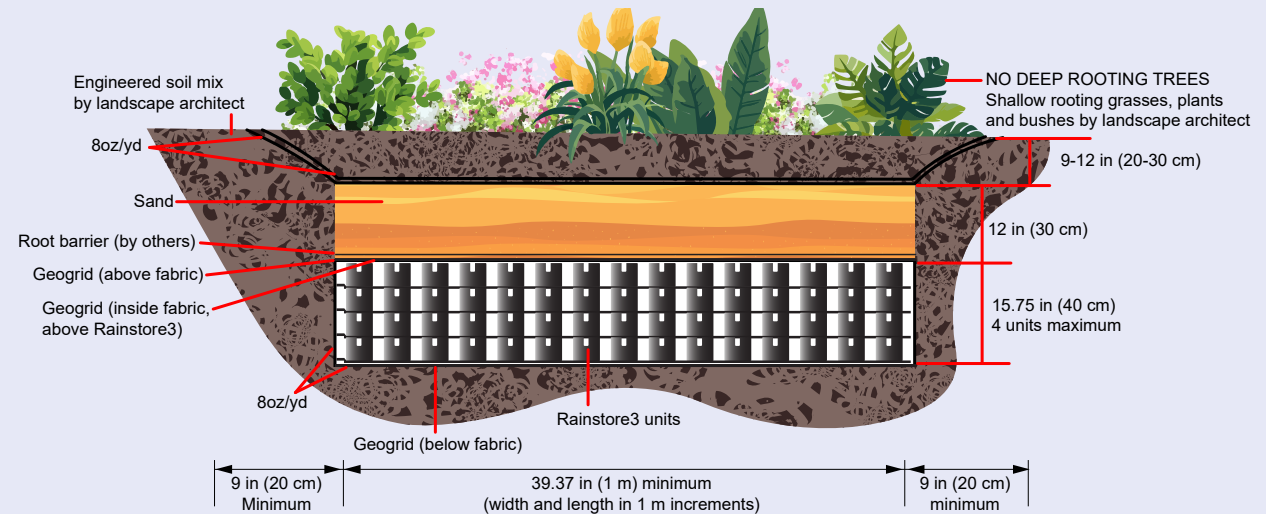
RAINSTORE3 SYSTEM

Typical Rainstore3 installation below paving or stormwater collection and detention (retention systems are identical with the addition of an impermeable liner encasing the chamber).



RAINSTORE3 BIO-RETENTION RAIN GARDEN SYSTEM

Rain garden design for water quality improvement through infiltration and bioremediation.



PRODUCT PERFORMANCE ANALYSIS

PERFORMANCE CRITERIA	RAINSTORE3 7.9 FEET (2.4M) HEIGHT	ARCHED CHAMBERS 34" X 75" X 16"	CORRUGATED PLASTIC PIPE 60 INCH DIAMETER	CORRUGATED METAL PIPE 72 INCH DIAMETER	CONCRETE PIPE 72" DIA. NON-PER- FORATED
% of excavated volume available for water storage	~89%*	~40%*	~60%*	~53%*	~38%*
% of storage volume occupied by stone	0%	~59%	~60%	~70%	0%
Maximum water storage volume / surface area	8.2 ft ² water storage / ft ² surface area	~1.4 ft ² water storage / ft ² surface area	3.8 ft ² water storage / ft ² surface area	4.7 ft ² water storage / ft ² surface area	3.2 ft ² water storage / ft ² surface areas
Chamber depth design flexibility	4" min., 98" max., 4" increments	12" min., 30.5" max.	12" dia. min., 60" dia. max., 6" increments	12" dia. min., 240" dia. max., 6" increments	12" dia. min., 240" dia. max., 6" increments
Cover depth required	12"	18"	12" – 30" based on diameter	12" – 24" based on diameter	6"
On-site handling and manual installation	Easy	Easy	Difficult	Difficult	Difficult
Maintenance, inspection, clean-out	Easy	Easy	Easy	Easy	Easy
% of chamber surface area available for infiltration	100%	~75% including side cuts	~15%, based on perforation area to pipe surface area.	~15%, based on perforation area to pipe surface area.	0%

*Calculations based on an average sized (10 meter x 10 meter) footprint installed per manufacturer's specifications.

FEATURED CASE STUDIES

UNDERGROUND WATER STORAGE OAK BEND TOWNHOMES

Learn how Rainstore3 supported local and state regulations to provide a water detention system that was quick and easy to install.

ATHLETIC FIELD DRAINAGE TULANE UNIVERSITY PRACTICE FIELDS

See how designers used Rainstore3 to store the site's runoff from stormwater while maximizing the limited area for an athletic practice field.



[Read More](#)



[Read More](#)





WATER GARDEN

THE WATER GARDEN OFFICE PARK

Check out how Rainstore3 supports a series of walkways, a river, gardens, pools, fountains, an amphitheater and other amenities – helping to store the water under this “oasis in the city.”



Read More





GROUNDING IN PERFORMANCE™

Invisible Structures is the leader in porous paving and stormwater management solutions. We enhance your project and the planet with strong, stylish, and streamlined solutions for:

GRASSPAVE2 | Grass Porous Paving



GRAVELPAVE2 | Gravel Porous Paving



RAINSTORE3 | Underground Stormwater Storage



SLOPETAME3 | Erosion Control



DRAINCORE2 | Drainage



BEACHRINGS2 | Portable ADA Access Mats

How long can an Invisible Structures product last? We'll get back to you. All maintained installations are still functioning and beautiful!



Invisible Structures is the Industry's Trusted Choice in Porous Paving, Underground Water Containment and Stormwater Solutions Since 1982.



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