VersiTank®

Stormwater Management

ELMICH

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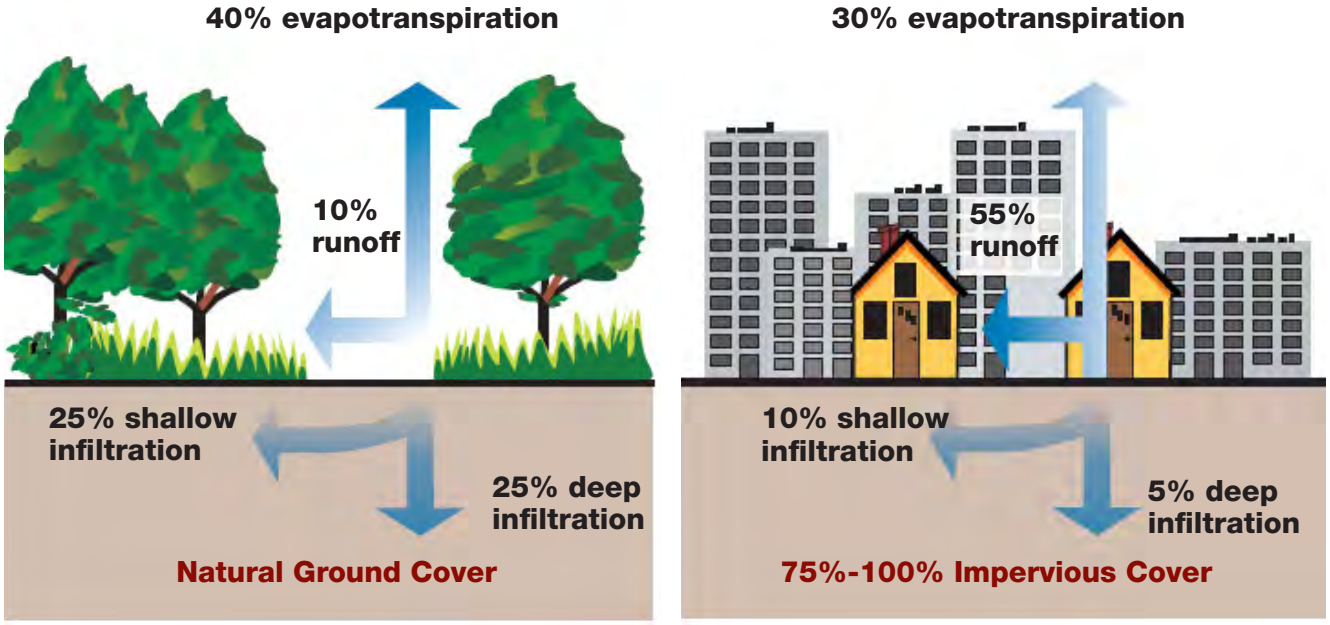
The Elmich Difference.

SINGAPORE GREEN BUILDING PRODUCT SGBC LEADER

100% Recyclable

VersiTank®

VersiTank® sub-surface water infiltration storage tank provides an efficient, cost-effective and ecologically sustainable solution for stormwater management. It reduces stormwater discharge volumes, provides at-source filtration of run-off, and allows harvesting of rainwater.



Source: U.S. Environmental Protection Agency, Washington, D.C.

Rapid urbanisation and industrial development have generated large areas of impervious surfaces such as roofs, roads, car parks and concrete surfaces, with a corresponding reduction in permeable surfaces such as forested land and grass fields.

Stormwater run-off that previously infiltrated into natural permeable surfaces now flows off impervious surfaces in urban areas. The water is conveyed directly via drainage systems consisting of open channels and pipes to storage or discharge outlet points.

The removal of natural permeable surfaces creates two challenges in managing stormwater run-off in urban areas: **pollution control** and **stormwater surge**. Conventional drainage systems are typically not designed for at-source pollution control before the water is discharged into drains, streams, lakes and reservoirs.

Changing weather patterns have also led to higher frequency of stormwater surges worldwide, and conventional drainage systems are often unable to cope with the substantially increased volumes, resulting in downstream flooding and higher degrees of pollution.

What is VersiTank®?

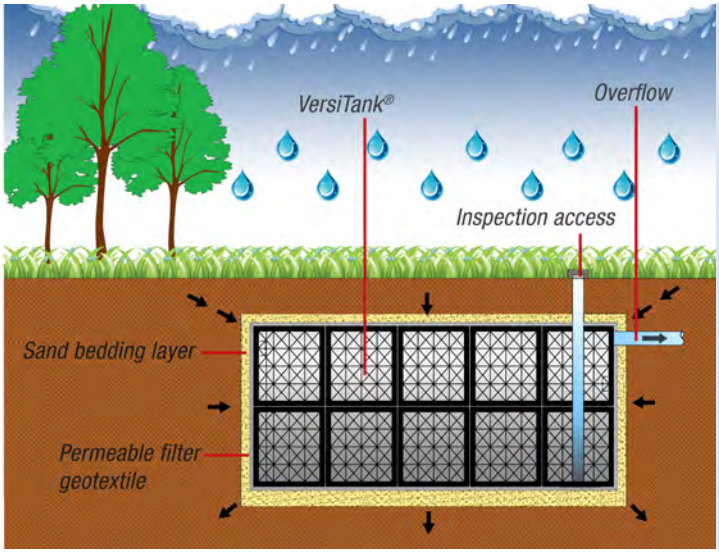
VersiTank® is a high-strength modular stormwater infiltration or storage tank made from polypropylene, designed as an at-source system for rainwater management for roofs and other impervious surfaces.

VersiTank® can be conveniently installed beneath open ground areas such as parking areas, driveways, bio-swales, rain gardens, playgrounds, sports fields and parks, allowing these surfaces to remain permeable.

VersiTank® is available in several sizes and may be configured in multiple layers to suit the differing requirements of a residential house, parks or large commercial or industrial developments.

Advantages

- High compressive strength allows for usage under trafficable areas
- Interlocks vertically and horizontally for maximum stability
- Low storage and transportation costs
- Caters for all volume requirements
- Easy assembly of panels and installation of modules
- No surface water storage hazards
- Contributes to achieving LEED SS, WE and MR credits, and BCA Green Mark points

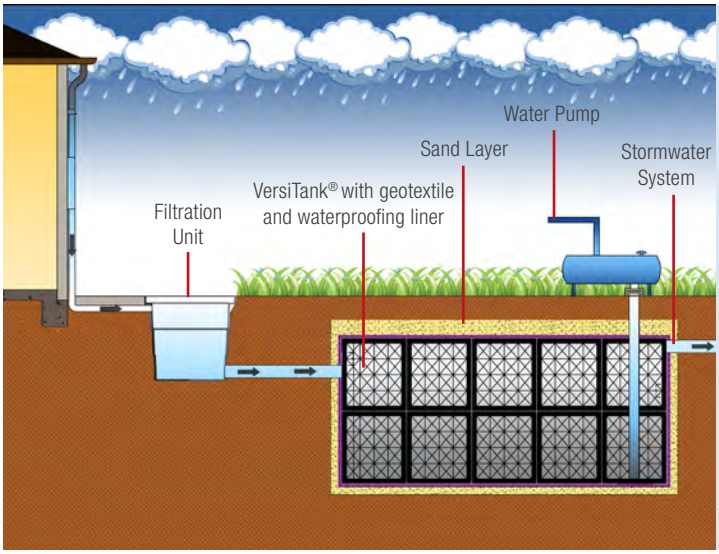


VersiTank® Infiltration System

Rainwater percolates and infiltrates the soil into the sand and filters through the geotextile that envelopes the VersiTank® modules.

Solids, including mud and clay, are filtered, and only clear and clean rainwater enters the tank. Rainwater is slowly released through an outlet, reducing peak runoff flow rates to prevent the overburdening of drainage networks.

VersiTank® Infiltration System installed at a park



VersiTank® Retention System

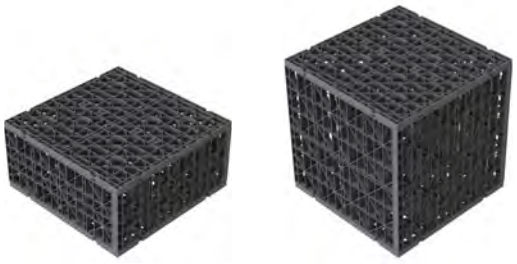
VersiTank® modules, enveloped with geotextile and an impermeable shell membrane, allows percolated and filtered rainwater channeled via pipes to be retained and stored.

With the installation of a water pump, the retained water can be repurposed for washing, irrigation, landscaping or as a non-potable water source. The retention of rainwater also reduces peak runoff flow rates to prevent the overburdening of drainage networks.

VersiTank® Retention System installed at a residential house

Technical Specifications

Material	PP	
Colour	Black	
	VT 553	**VT 555**
Size (L x W x H) (mm)	500 x 500 x 250	500 x 500 x 500
Volume (m^3)	0.063	0.125
Failure load (t/m^2)		
- 1 centre panel	19 (VT553-1S)	17 (VT555-1S)
- 2 centre panels	-	26 (VT555-2S)
- 2 centre panels & 4 posts	-	52 (VT555-2S(4P))
- 2 centre panels & 8 posts	-	79 (VT555-2S(8P))
Weight (kg)		
- 1 centre panel	4.6	6.5
- 2 centre panels	-	7.3
- 2 centre panels & 4 posts	-	9.3
- 2 centre panels & 8 posts	-	11.3
Lateral load (t/m^2)		
- X - axis	29	10
- Y - axis	25	10
Surface area (m^2)	1.0	1.5
Surface void (%)	~65	~65
Internal void (%)	~95	~95
Biological/Chemical resistance	Unaffected by moulds and algae. Good resistance to alkali and bitumen.	



VT 553 VT 555

Typical Applications

Min. Soil Overburden (mm)[1]	VT Type	Max. VT Layers
Rain garden/void filler/pedestrian & cyclist		
500	VT 553-1S*/VT 555-1S	5
Passenger car (≤ 2 tonnes unladen weight)		
1,000	VT 555-2S	3
Heavy goods vehicle (≤ 16 tonnes laden weight)		
1,000	VT 555-2S (4P)	3
Fire truck (≤ 30 tonnes or ≤ 81 t/m² per outrigger)		
1,500	VT 555-2S (8P)	3

[1] Recommended
**S represents the number of centre stabilisers*
***P represents the number of Support Posts.*

The Elmich security hologram ensures authenticity of the products.

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