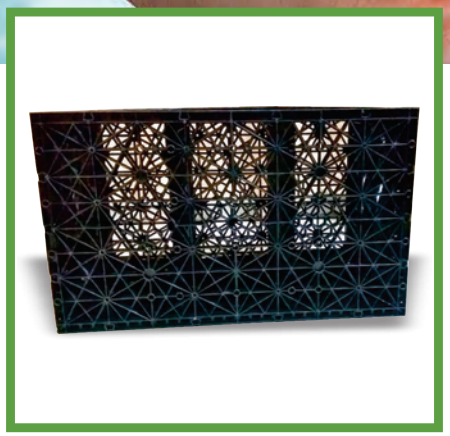
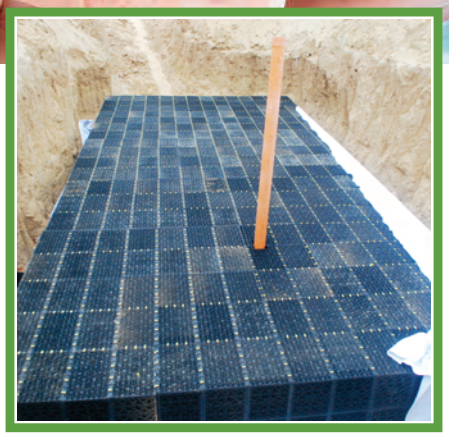
retas™
recharge . retain . reuse

rainMAXX™
TANK

- Rain Water Harvesting
- Fresh Water Management
- Sub-surface Drainage Solutions
- Consultancy & Audit





RETAS ENVIRO SOLUTIONS PVT LTD

MAKE IN INDIA

Department of Industrial Policy and Promotion
Ministry of Commerce and Industry
Government of India

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ABOUT US

RETAS™ (Sanskrit for water droplet) defines the seed and elixir of life. Our foundation is built on the idea of conserving water, protecting the natural resources from depletion and to keep evolving ourselves unless we reach our goal – which water remains a natural resource for everyone. We envision our society and country to be water abundant and not water stressed.

We believe that water is an important natural resource which needs to be conserved and judiciously utilized.

WHAT WE DO : (Rain Water Harvesting, Water Conservation, Fresh Water Management, Sub-surface drainage solutions, Consultancy)

OUR VISION

- To conserve and harvest every possible rain drop. To keep working as a catalyst until **water remains a natural resource** for everyone.
- To create and lead the path of journey towards creating a self-sustainable environment by means of **"3Rs i.e. Reduce Water Waste, Recharge Ground Water, Reuse Rain Water".**

OUR MISSION

- To provide scientific, innovative and suitable services working around fresh water ecosystem.
- To spread awareness on water conservation (from urban area, industrial area to rural area) and become the most trusted partner for the community.

What is Rain Water Harvesting?

With the gradual depletion of ground water level, population growth, urbanization and fast paced infrastructure development, the only way to conserve fresh water is by storing rain water and recharging the ground water.

Rain Water Harvesting is an age old technique for collecting, filtering, storing and using rain water for later use.

Why Rain Water Harvesting?

Rain water harvesting (RWH) is one of the most effective methods of water management and water conservation. It involves collection and storage of rain water at surface or in sub-surface aquifer, before it is lost as surface run off.

NEED	ADVANTAGES
• Overcome inadequacy of surface water • Protect depletion of ground water levels • Increase infiltration in sub-soil • Reduce ground water contamination • Improve ground water quality by dilution • Increase vegetation cover • Regulatory compliance	• Cost of recharge to sub-surface reservoir is lower • Aquifer serves as a distribution system also – increases productivity • Reduces flood hazards • Effects rise in ground water levels • Reduces soil erosion • Remove bacteriological and suspended impurities during the surface water transition within the sub-soil

As an estimate, merely capturing the rain water and run off on 2% of India's land area could supply 26 gallons of water per person.

WHERE	HOW
• Areas where ground water levels are declining on regular basis • Substantial amount of aquifer has been de-saturated • Availability of ground water is inadequate in lean months • Infiltration of rain water into sub-soil has decreased drastically • Recharging of ground water has diminished	• Recharge pit • Percolation tanks • Recharge well • Recharge trench • Store and reuse tanks • Ponds

The tanks are prepared using the conventional (brickwork, concrete) or the modern technique (modular system).
RETAS™ manufactures and executes rain water harvesting through RAINMAXX™ Tanks which are modular by design.

rainMAXX™ TANK

Rain water harvesting through RAINMAXX™ tanks

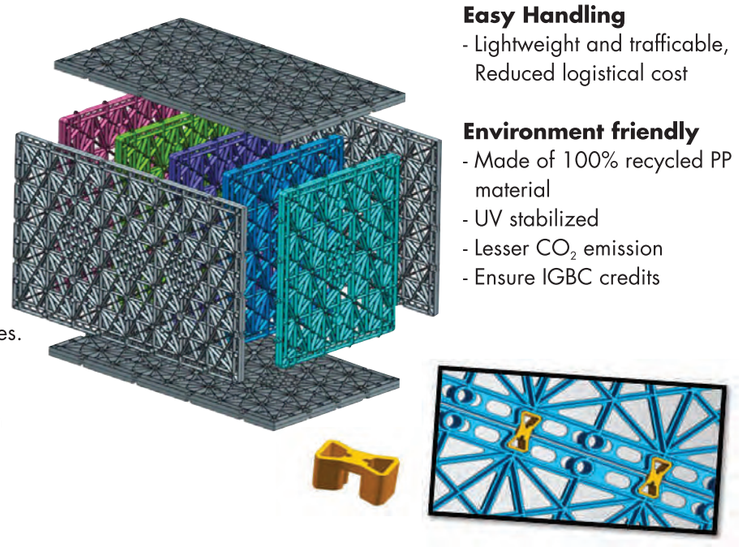
We manufacture RAINMAXX™ modular tanks which are made of 100% recycled PP material. These tanks are used sub-surface for collection, infiltration and storage of rain water.

RAINMAXX™ tanks are innovated and designed after rigorous rounds of discussions with industry experts, town planners, architects and users. We have come up with a product which embodies the theme of MAKE IN INDIA.

Strong Structural Design
- Can be installed under landscaped area, driveways, car parking, Load capacity upto 45 Tones

Make in India - for the world
- Reduced lead time, local inventory

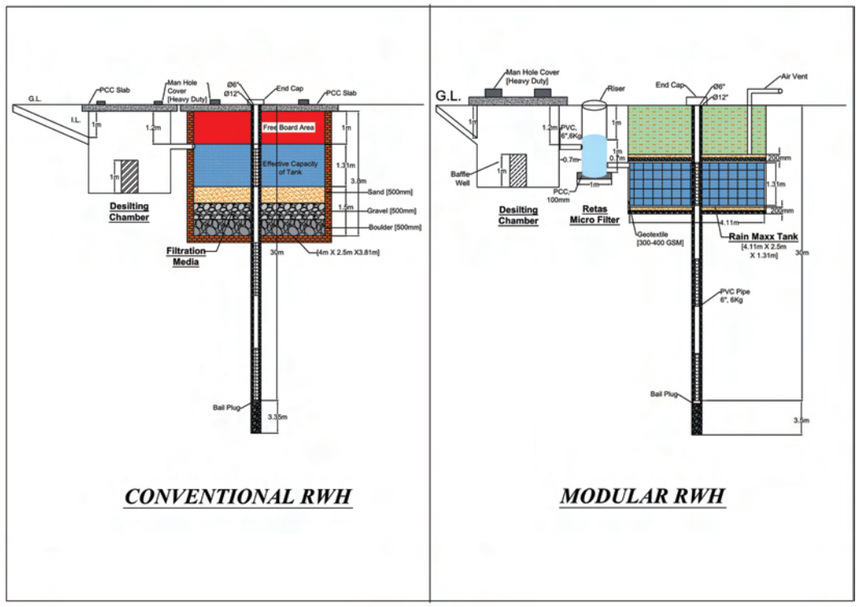
Modular and Honeycomb
- Easy to assemble by using combination of small and large plates. create any size tank.
- Introduction of connectors which provides better stability and strength
- Above 95% void area



Easy Handling
- Lightweight and trafficable, Reduced logistical cost

Environment friendly
- Made of 100% recycled PP material
- UV stabilized
- Lesser CO_2 emission
- Ensure IGBC credits

Cross Sectional Design

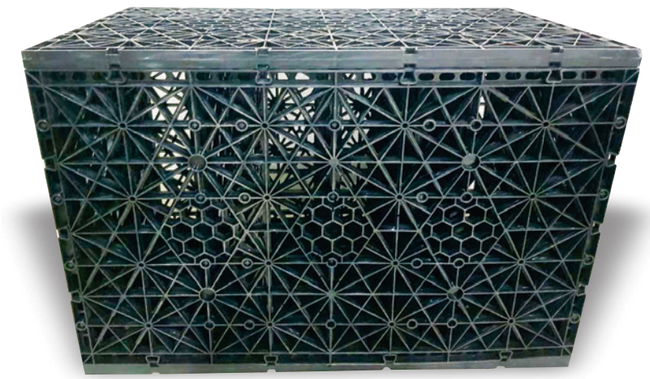


TANK MODULE SPECIFICATION SHEET

Module (Units)	Width (mm)	Width (Inches)	Length (mm)	Length (Inches)	Height (mm)	Height (Inches)
Single (1)	410	16.14	683	26.89	450	17.72
Double (2)	410	16.14	683	26.89	880	34.65
Triple (3)	410	16.14	683	26.89	1310	51.57
Quad (4)	410	16.14	683	26.89	1740	68.50
Pent (5)	410	16.14	683	26.89	2170	85.43

Module (Units)	Tank Vol (Ltrs)	Tank Vol (CF)	Tank Vol (Gal)	Water Storage Vol (Ltrs)	Water Storage Vol (CF)	Water Storage Vol (Gal)
Single (1)	126.01	4.45	33.29	120.97	4.27	31.96
Double (2)	246.43	8.70	65.10	236.57	8.35	62.50
Triple (3)	366.84	12.95	96.91	352.17	12.43	93.04
Quad (4)	487.25	17.21	128.72	467.76	16.52	123.57
Pent (5)	607.67	21.46	160.53	583.35	20.61	154.11

Surface Area	96% void
Material	100% recycled Polypropylene ALSO available in 100% VIRGIN HIPP
Biological & Chemical Resistance	Unaffected by moulds and algae, Soil-Bourne chemicals, bacteria and bitumen.
Service Temperature	-30°C to 120°C (-22°F to 248°F)
Load Capacity	30 tonnes/m2(4 smallplates) ; 45 tonnes/m2 (7 small plates)



rainMAXX™ TANK

COMPARISON CHART

S.No	Criteria	Modular RWH	Conventional (Brick or Concrete Tank)
1	**Clog prevention and reliability**	Advanced dual-step external filtration, subjected to prompt maintenance	Gravel based filtration, subjected to prompt maintenance
2	**Time for installation (tank only)**	This process takes merely 1 to 15 days irrespective of the tank size.	45 days to several months to lay out PCC, brickwork, plaster, steel framework, RCC roofing
3	**Effective Detention Volume (storage capacity)**	Above 95% of tank volume Very compact, optimal space utilization	Reduced Tank Volume – Free board space (0.5 to 2m) Filter media volume (20 – 30% of tank volume)
4	**Space utilization**	Top surface may be used for Parking lots, Gardens, Lawns, Children's play gound, sports fields, etc	Generally, located where land use is demarcated as unusable Requires overdesigning of cover slab - to accommodate lawns or parking lots at the surface level
5	**Load bearing challenges**	Load bearing capacity of these panels is very high and can take up to 45 tonnes/m2 without requiring special load bearing designs	Architects/Structural Engineers, Architects involvement and civil contractors honest work, essential to ensure load bearing of cover slab.
6	**Safety**	Completely underground and no easy access to storage space No risk, even for applications in schools	Manhole access to hollow storage space. History of accidents during maintenance Accumulation of poisonous and odorous gases, owing to deterioration of organic matter inside the tank
7	**Environmental Impact**	Material is made of 100% recycled Polypropylene. Can be recycled in the future as well. Eco-friendly, qualifies for Green Rating	Virgin material Sourcing gravels and pebbles is a challenge
8	**Capacity**	Holding/recharge capacity WHICH begins from 1 meter cube to any size imaginable without significantly affecting the time of installation	Design, financial and logistic challenges with large structures
9	**Life and material standardization**	Modules, Geotextile, and waterproof liners are lab tested based on various criteria. Quality assured Very long shelf and can be endlessly recycled	Life with good quality work is 20-30 year. Poor quality of work may cause the project to fail Quality assurance is a challenge
10	**Reduce/ extend**	Tank size could easily be extended or reduced or even relocated as per future use	Requires construction of a new tank, if future usage or requirement changes
11	**Aesthetics**	Does not affect aesthetics of the property, rather helps to improve the same.	Non aesthetic
12	**Seasonal challenges**	Could be installed between rainfall events, as 1 or 2 days are sufficient for installation of tank, generally.	Work completion dependent on good weather. Monsoon season pretty much stalls all work.

INSTALLATION PROCESS CHART

Pre Installation Process

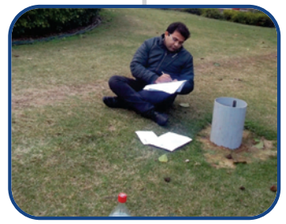
STEP 1

VES Survey

STEP 2

Bore Logging Test

STEP 3



Soil Percolation Test

Installation Process

STEP 1

Recharge Well

STEP 2

Excavation

STEP 3

Base Preparation

STEP 4

Laying & Cutting of Geotextile

STEP 5

Laying of Rainmaxx™ Modules

STEP 6

Assembly of Rainmaxx™ Tank

STEP 7

Wrapping of Geotextile

STEP 8

Backfilling

STEP 9

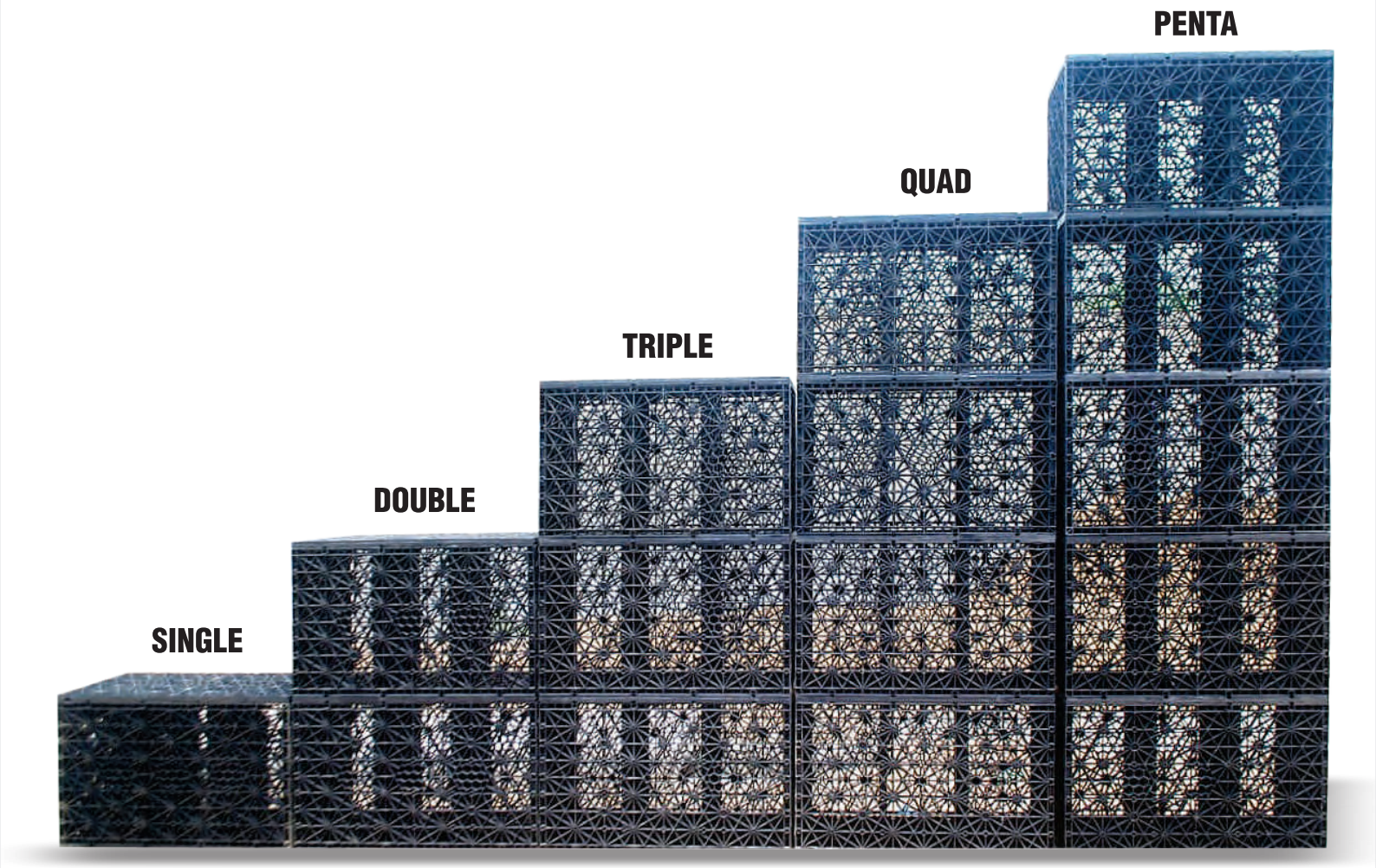
Connection with Microfilter

STEP 10

Cleaning of Recharge Well

rainMAXX™ TANK

RAINMAXX™ MODULAR TANK SYSTEM



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Office-4, 323, Mayur Vihar Extn. Phase -1, New Delhi-110091
Mob : +91 9560778688, 9711074119, 7289965519
Ph : +91 120-4544770
E-mail : info@resplindia.com
Web : www.resplindia.com