

SPECCO STORMWATER MANAGEMENT

Specco Integrated Water Management

Integrated water management (IWM) of stormwater has the potential to address many of the issues affecting the health of waterways and water supply challenges facing the modern urban city.

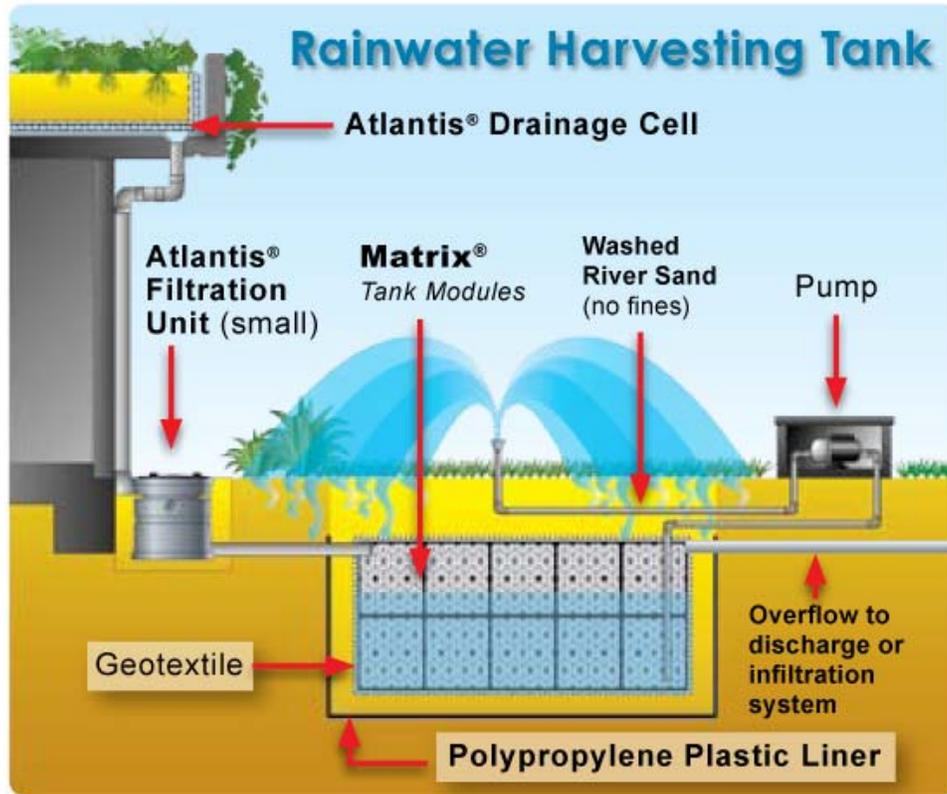
Also known as low impact development in the United States and Puerto Rico, IWM has the potential to improve runoff quality, reduce the risk and impact of flooding and deliver an additional water resource to augment potable supply.

The development of the modern city often results in increased demands for water supply due to population growth, while at the same time altered runoff predicted by climate change has the potential to increase the volume of stormwater that can contribute to drainage and flooding problems. IWM offers several techniques including stormwater harvest (to reduce the amount of water that can cause flooding), infiltration (to restore the natural recharge of groundwater), biofiltration or bioretention (e.g. rain gardens) to store and treat runoff and release it at a controlled rate to reduce impact on streams and wetland treatments (to store and control runoff rates and provide habitat in urban areas).

IWM as a movement can be regarded as a in its infancy and brings together elements of drainage science, ecology and a realization that traditional drainage solutions which utilize more efficient pipe networks transfer problems further downstream to the detriment of the health of our stressed environmental streams.

Specco tanks can capture water from roofs, gardens, lawns, paved areas and driveways increasing the capacity of water retention in your home necessary for rain water harversting.





Specco Chambers may be used as underground retention/detention systems, as replacements for ponds, concrete structures or pipe and stone installations.



Heavy Duty H-20 traffic rated chambers that will withstand been under parking areas, driveways, recreational facilities and others saving you needed land space maximizing your real state.



The advantages of the system:

- Allows for more controlled infiltration into the ground.
- Replenishes the surrounding soil and aquifer.
- Decreases health liability issues such as West Niles breeding grounds for mosquitoes, or drowning.
- Avoids redirecting storm water to a watercourse and potentially overloading or polluting our natural surroundings and resources.
- Frees up land for further development such as athletic fields or parking areas.
- CULTEC chambers effectively serve environmentally sensitive areas while making valuable land available for parking lots, athletic fields and other applications.
- The high capacity, open bottom chambers provide greater storage and much higher infiltrative capability than conventional pipe and stone systems.
- As a replacement for retention ponds, CULTEC chambers alleviate insurance concerns and loss of valuable land area.
- Less area and less crushed stone are required compared to conventional systems.

Low impact development emphasizes in the protection of the water quality. Specco with the vortex filtration systems provides enhanced gravity separation of suspended stormwater pollutants in a compact configuration. Particle settling or floatation is accelerated by centripetal forces induced by the tangential flow pattern augmented by a highly circuitous flow path. The unit uses two independent cylindrical separators: Low flow is diverted by the inlet to the first separator, while moderate flow begins to overflow the first control weir and enter the second separator. Settled particles collect in the bottom storage area of the unit which is isolated from the fluid outlet, minimizing re-suspension. Floating debris and oils are temporarily held at the top of each separator and deposited in the upper storage area by peak storm events. Once the unit treatment capacity is exceeded, excess flow breaches a second control weir at the inlet and passes through the bypass pipe without decreasing the treatment flow or re-entraining captured pollutants.

FloGard® Dual-Vortex Hydrodynamic Separators are designed to effect greater than 80% removal of TSS reflective of typical urban runoff. Units are sized to treat stormwater at the design removal efficiency in an equal or smaller footprint than equivalent competitor's products.



Stormwater Management Regulations — 40 CFR 122.26 and Specco Compliance Products

The National Pollutant Discharge Elimination System (NPDES) permit program controls water pollution by regulating point sources and non-point sources that discharge pollutants into waters of the United States. • These regulations are a key component of EPA's Clean Water Act. • The overriding goal is to protect the quality of U.S waterways by reducing the discharge of sediment, oil and chemicals into storm drains, surface water and groundwater. Some of the action require by this regulation are:

- A Stormwater Pollution Prevention Plan (SWPPP) must be filed with the state or regional EPA to receive a stormwater permit.
- The Stormwater Plan requires the use of "Best Management Practices" (BMPs) to control stormwater runoff during construction activity or as part of a long-term maintenance plan.
- BMPs that are specified in the Plan must reduce the discharge of pollutants to the maximum extent practicable (MEP), protect water quality and satisfy the appropriate water quality requirements of the Clean Water Act

Three (3) main categories must comply with the NPDES Regulations:

1. **Industrial Sites** — a diverse range of 450 Standard Industrial Classification Codes (SIC) are regulated. Visit www.Stormwater-Products.com/regs for a detailed listing.
2. **Construction Activities** — Phase II of the regulations went into effect in March 2003 and requires that construction sites on one (1) acre or more (commercial or residential) must comply.
3. **Municipalities** — Phase II requires that all municipalities with a population of 10,000 or more must comply. Regulated properties include city-owned facilities (i.e. maintenance yards, water treatment plants, refuse dumps, city parks, parking garages, marinas, etc.) and city-supervised construction activities (i.e. road work, water main repairs, landscape development and maintenance, etc.)

Specco Products are designed for practical use and at the same time protect the quality of waterways while helping you comply with EPA's regulations:

Industrial Facilities — keep oil and other contaminants from entering storm drains, pollution control.
Construction Sites — capture eroded soil and wind-blown debris, dewatering bags, oil containments, etc.
Parking Lots, "Drive-Up" Retail Facilities — selected geotextiles collect oil, fuel and other contaminants that drip from cars.

Keep in mind that Specco Environmental Division can also help you with your permits needs, trainings, and serving as liaison with the Environmental Agencies.



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