Filterra®
High Performance Bioretention
Contech is the leader in stormwater solutions, helping engineers, contractors and owners with infrastructure and land development projects throughout North America.

With our responsive team of stormwater experts, local regulatory expertise and flexible solutions, Contech is the trusted partner you can count on for stormwater management solutions.

Contech is your partner in stormwater management solutions
Low Impact Development in a Small Footprint – Filterra®

Filterra is an engineered high-performance bioretention system. While it operates similar to traditional bioretention, its high flow media allows for a reduction in footprint of up to 95% versus traditional bioretention practices. Filterra provides a Low Impact Development (LID) solution for tight, highly developed sites such as urban development projects, commercial parking lots, residential streets, and streetscapes. Its small footprint also reduces installation and life cycle costs versus traditional bioretention. Filterra can be configured in many different ways to enhance site aesthetics, integrate with other LID practices, or increase runoff reduction through infiltration below or downstream of the system.

At the Manchester Stormwater Park seen above, the Filterra systems surrounding the central courtyard allowed for the creation of a community space with parking, sidewalks, and benches in a quaint downtown area. A traditional bioretention system treating the same drainage area would have occupied the entire park area leaving no room for these amenities.
How the Filterra® Works

Tested in the field and laboratory ...

1. Stormwater enters the Filterra through a pipe, curb inlet, or sheet flow and ponds over the pretreatment mulch layer, capturing heavy sediment and debris. Organics and microorganisms within the mulch trap and degrade metals and hydrocarbons. The mulch also provides water retention for the system’s vegetation.

2. Stormwater flows through engineered Filterra media which filters fine pollutants and nutrients. Organic material in the media removes dissolved metals and acts as a food source for root-zone microorganisms. Treated water exits through an underdrain pipe or infiltrates (if designed accordingly).

3. Rootzone microorganisms digest and transform pollutants into forms easily absorbed by plants.

4. Plant roots absorb stormwater and pollutants that were transformed by microorganisms, regenerating the media’s pollutant removal capacity. The roots grow, provide a hospitable environment for the rootzone microorganisms and penetrate the media, maintaining hydraulic conductivity.

5. The plant trunk and foliage utilize nutrients such as Nitrogen and Phosphorus for plant health, sequester heavy metals into the biomass, and provide evapotranspiration of residual water within the system.

Plants and organic material are vital to the long term performance of bioretention systems.

Using nature to facilitate Stormwater Management
**Filterra® Features and Benefits**

<table>
<thead>
<tr>
<th>FEATURE</th>
<th>BENEFITS</th>
</tr>
</thead>
<tbody>
<tr>
<td>High biofiltration media flow rate (up to 175”/hr+)</td>
<td>Greatly reduced footprint versus traditional bioretention and LID solutions</td>
</tr>
<tr>
<td>Filterra system is packaged, including all components necessary for system performance</td>
<td>Quality control for easy, fast and successful installation</td>
</tr>
<tr>
<td>Quick and easy maintenance</td>
<td>Low lifecycle costs</td>
</tr>
<tr>
<td>Variety of configurations and aesthetic options</td>
<td>Integrates easily into any site or landscape plan</td>
</tr>
<tr>
<td>Natural stormwater management processes featuring organics and vegetation</td>
<td>Meets Low Impact Development requirements and ensures long-term performance</td>
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</tbody>
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**Select Filterra® Approvals**

Filterra is approved through numerous local, state and federal verification programs, including:

- New Jersey Department of Environmental Protection (NJ DEP)
- Washington Department of Ecology (GULD) – Basic, Enhanced, Phosphorus, and Oil
- Maryland Department of the Environment - Environmental Site Design (ESD)
- Texas Commission on Environmental Quality (TCEQ)
- Virginia Department of Environmental Quality (VA DEQ)
- Maine Department of Environmental Protection (ME DEP)
- Atlanta, GA Regional Commission
- Los Angeles County, CA - Alternate to Attachment H
- City of Portland, Oregon Bureau of Environmental Services
- North Carolina Department of Environmental Quality (NC DEQ)
### Filterra® Performance Testing Results

#### APPLICATION TIPS

- The Filterra system has been tested under industry standard protocols and has proven its pollutant removal performance and system longevity.
- Contech invests significant resources in media blending calibration and product testing to ensure our media meets our strict performance specifications every time.
- Keep regulators and owners happy by selecting a product with predictable and proven maintenance longevity.

<table>
<thead>
<tr>
<th>POLLUTANT OF CONCERN</th>
<th>MEDIAN REMOVAL EFFICIENCY</th>
<th>MEDIAN EFFLUENT CONCENTRATION (MG/L)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Suspended Solids (TSS)</td>
<td>86%</td>
<td>3.3</td>
</tr>
<tr>
<td>Total Phosphorus - TAPE (TP)</td>
<td>70%</td>
<td>0.05</td>
</tr>
<tr>
<td>Total Nitrogen (TN)</td>
<td>34%</td>
<td>0.54</td>
</tr>
<tr>
<td>Total Copper (TCu)</td>
<td>55%</td>
<td>0.004</td>
</tr>
<tr>
<td>Total Dissolved Copper</td>
<td>43%</td>
<td>0.003</td>
</tr>
<tr>
<td>Total Zinc (TZn)</td>
<td>56%</td>
<td>0.04</td>
</tr>
<tr>
<td>Total Dissolved Zinc</td>
<td>54%</td>
<td>0.1</td>
</tr>
<tr>
<td>Total Zinc (TZn)</td>
<td>56%</td>
<td>0.04</td>
</tr>
<tr>
<td>Total Petroleum Hydrocarbons</td>
<td>87%</td>
<td>0.71</td>
</tr>
</tbody>
</table>

Sources:
- UVA (TARP) Field Study - 2006
- Herrera (TAPE) Study - 2009
- Herrera (TAPE) Study - 2014
- NC State Study - 2015

Note: Some jurisdictions recognize higher removal rates. Contact your Contech Stormwater Consultant for performance expectations.
**Filterra® Maintenance**

**Activation and first year of maintenance is included with every system.***

With proper routine maintenance, the engineered media within the Filterra system should last as long as traditional bioretention media. Routine maintenance is included by the manufacturer on all Filterra systems for the first year after activation.* This includes a maximum of 2 visits to remove debris, replace pretreatment mulch, and prune the vegetation.

**Maintenance is low-cost, low-tech and simple:**

- Remove trash, sediment, and mulch
- Replace with a fresh 3” layer of mulch
- No confined space entry or special tools
- Easily performed by landscape contractor or facilities maintenance provider

*Some exclusions may apply.

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Filterra offers high performance bioretention for advanced pollutant removal with easy maintenance.

Plant health evaluation and pruning is important to encourage growth.

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All stormwater treatment systems require maintenance for effective operation.
Filterra® Configurations

Multiple system configurations integrate with site hydraulic design and layout ...

The Filterra is available in a variety of precast configurations as well as Filterra Bioscape, which can be installed directly into an excavated basin.

*Additional configurations available, including offline - pipe, peak diversion - grate, and internal bypass curb-chamber.
Filterra® Bioscape® Configurations

- Multiple configurations allow for easy site integration.
- Additional configurations available, including bioscape vault offline pipe.

*Filterra Bioscape Vault Offline
Bypass via downstream catch basin.

*Filterra Bioscape Vault Basin
Bypass via upstream structure.
Multiple inlet options.

*Bypass via upstream structure.
Multiple inlet options.

*Additional configurations available, including bioscape vault offline pipe.
Filterra® Aesthetic Options

Multiple aesthetic options to enhance the appearance and integrate with landscaping...

An aesthetic solution to meet your bioretention needs
Filterra® Bioscape®

Large-scale Filterra that can be customized to your site ...

- Ideal for Filterra systems greater than 300 square feet
- Design with or without containment structure
- Incorporate infiltration directly below the system, where required
- Combine with upstream storage or downstream infiltration
- Use as an alternative to larger regional traditional bioretention systems
- Easily add pretreatment Hydrodynamic Separator for large-scale or heavy pollutant loading applications
A partner you can rely on

Few companies offer the wide range of high-quality stormwater resources you can find with us — state-of-the-art products, decades of expertise, and all the maintenance support you need to operate your system cost-effectively.

THE CONTECH WAY
Contech® Engineered Solutions provides innovative, cost-effective site solutions to engineers, contractors, and developers on projects across North America. Our portfolio includes bridges, drainage, erosion control, retaining wall, sanitary sewer and stormwater management products.

TAKE THE NEXT STEP
For more information: www.ContechES.com

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STRUCTURES SOLUTIONS

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