PURPOSE & DESCRIPTION
Filtrexx® Inlet protection is a three-dimensional tubular sediment control and storm water runoff filtration device typically used for storm drain Inlet protection of sediment and soluble pollutants (such as phosphorus and petroleum hydrocarbons) on and around construction activities. Filtrexx® Inlet protection traps sediment and soluble pollutants by filtering runoff water as it passes through the matrix of the Inlet protection and by allowing water to temporarily pond behind the Inlet protection, allowing deposition of suspended solids.

APPLICATION
Filtrexx® Inlet protection has three distinct applications:
• around drain inlets,
• in front of curb inlets,
• as curb sediment containment systems

These applications are described in detail below and shown graphically in Figure 2.1 and 2.2.

Drain inlets are located in areas that receive runoff from surrounding lands, often exposed and disturbed soils, and are located at a low point, or in a sump. Inlet protection used around drain inlets (or Drain Inlet protection) should completely enclose the circumference of the drain and where possible should not be placed on a grade or slope. Inlet protection used around drain inlets should never be the only form of site sediment control and should be accompanied by erosion control/slope stabilization practices, such as compost erosion control blankets or rolled erosion control blankets. Inlet protection should never be placed where they divert runoff flow from the drain inlet, or on top of the inlet, which can cause flooding. Under high runoff and sediment loading conditions placement of 1-2 in (25-50 mm) diameter rock (AASHTO #2) may be placed around the outer circumference of the Inlet protection up to ½ the height of the Inlet protection. This will help slow runoff velocity as it contacts the Inlet protection and will reduce sediment build-up and clogging of the Inlet protection.

Curb inlets are generally located on paved surfaces and are designed to rapidly drain storm runoff from roadways to prevent flooding that poses a hazard to vehicular traffic. Inlet protection devices should be placed in a manner which intercepts runoff prior to entering the inlet, but does not block or divert runoff from the inlet. To prevent diversion of runoff, Inlet protection used around curbs (or Curb Inlet protection) should be used in low points, or sumps, and minor slopes or grades. Inlet protection should never be placed in or on the curb inlet drain, or placed in a manner than obstructs vehicular traffic. Inlet protection height should be at least 1 in (25 mm) lower than top of curb inlet to allow for overflow into the drain and not over the curb. Maximum sediment removal efficiency occurs when minor ponding exists behind Inlet protection but should never lead to flooding.

Curb sediment containment systems are used to reduce the sediment and pollutant load flowing to
a curb inlet. They are generally placed on paved surfaces perpendicular to runoff flow and should be lower than the height of the curb. Curb sediment containment systems should never cause flooding or placed where they are a hazard to vehicular traffic. Inlet protection used for curb sediment containment (or Curb Sediment Containment Inlet protection) can be placed on a grade but should never be placed directly upslope from curb inlet where it may inadvertently divert runoff from entering curb inlet.

ADVANTAGES AND DISADVANTAGES

Advantages

• Tubular filtration matrix allows for better trapping and removal of sediment and soluble pollutants in storm water runoff compared to planar constructed sediment control devices, such as silt fences.
• Inlet protection can be installed on soil or paved surface conditions.
• Greater surface area contact with soil or pavement than typical sediment control devices, reducing potential for runoff to undercut the device leading to unfiltered sediment.
• No trenching is required; therefore soil is not disturbed upon installation.
• Drain Inlet protection can be installed year-round in difficult soil conditions such as frozen or wet ground, and dense and compacted soils, as long as stakes can be driven.
• Inlet protection is easily implemented as a treatment in a greater treatment train approach to erosion and sediment control.
• Organic matter and humus colloids in FilterMedia™ have the ability to bind and adsorb phosphorus, metals, and hydrocarbons that may be in storm water runoff.
• Microorganisms in compost FilterMedia™ have the ability to degrade organic pollutants and cycle captured nutrients in storm water runoff.
• Soxx™ (mesh netting containment system) allows Inlet protection to be placed in areas of high sheet flow and low concentrated flow.
• Drain Inlet protection can be direct seeded at time of application to provide greater stability and filtration capability once vegetation is established, if used on soil surface.
• FilterMedia™ is organic and can be left on site soil after permanent stabilization is complete, to be used in landscape design and/or seeded and planted with permanent vegetation.
• FilterMedia™ improves existing soil structure if spread out and used as a soil amendment after construction activity is complete.
• Biodegradable Drain Inlet protection can be left on site after construction activity eliminating the need for removal and labor and disposal costs.
• Inlet protection is available in 8 in (200mm), 12 in (300mm), 18 in (450mm), 24 in (600mm), and 32 in (800mm) diameters.
• Inlet protection may assist in qualification for LEED® Green Building Rating and Certification credits under LEED® New Construction 2.2. Awarded credits may be possible from SS Prerequisite 1, SS Credit 5.1, SS Credit 6.2, WE Credit 2, MR Credit 4.1, MR Credit 4.2, MR Credit 5.1, MR Credit 5.2, and MR Credit 6.

Note: LEED® is an independent program offered through the US Green Building Council. LEED® credits are determined on a per project basis by an independent auditing committee. Filtrexx® neither guarantees nor assures LEED® credits from the use of its products.

Disadvantages

• If filler material of Inlet protection is not Certified FilterMedia™, hydraulic flow rate and and/or sediment and pollutant removal performance may be diminished.
• If not installed correctly, maintained or used for a purpose or intention that does not meet specifications, performance may be diminished.
• If land surface is extremely bumpy or rocky ground surface contact to Drain Inlet protection may be diminished thereby adversely effecting performance.
• If Inlet protection is installed on a grade or
slope, runoff may be diverted from drain or inlet, causing flooding downstream.

- If runoff breaches Inlet protection sediment retention will be minimal.
- Incorrect installation or application may cause flooding or pose a hazard to vehicular traffic.
- Inlet protection should never be the only form of site sediment control.
- Inlet protection should only be used in small drainage areas.

**MATERIAL SPECIFICATIONS**

Inlet protection use only high wear heavy duty netting materials (Safety Soxx™) available from Filtrexx® International, LLC and are the only mesh materials accepted in creating Inlet protection for any application. For Soxx™ Material Specifications see Table 2.1.

**FILTERMEDIA™ CHARACTERISTICS**

Inlet protection use only Certified Filtrexx® FilterMedia™ which is a coarse composted material that is specifically designed for removal of solids and soluble pollutants from storm water runoff. FilterMedia™ can be altered or customized to target specific pollutants in runoff as approved by the Engineer or Filtrexx® International. All Certified Filtrexx® FilterMedia™ has been third party tested and certified to meet minimum performance criteria defined by Filtrexx® International. Performance parameters include hydraulic flow through rate, total solids removal efficiency, total suspended solids removal efficiency, turbidity reduction, nutrient removal efficiency, metals removal efficiency, and motor oil removal efficiency. For information on the physical and chemical properties of Certified FilterMedia™ refer to Certified FilterMedia™ Specifications in Appendix 5.25. Look for the Filtrexx® Certified™ FilterMedia™ Seal from our international network of Filtrexx® Certified™ Installers.

**PERFORMANCE**

Performance testing and research on Sediment control has been extensive. For a summary of performance testing, research results, and design specifications see Table 2.2. For copies of publications, full reports, or Tech Link summaries contact Filtrexx® International, LLC.

Successful bidders will furnish adequate research support showing their manufactured product meets or exceeds performance and design criteria outlined in this standard specification. Research or performance testing will be accepted if it meets the following criteria: conducted by a neutral third party, utilizes standard test methods reported by ASTM or referenced in a peer reviewed scientific journal, product and control treatments are tested in triplicate, performance results are reported for product and control (control should be a bare soil under the same set of environmental and experimental conditions), results are peer reviewed, results indicate a minimum 60% TSS removal efficiency and a minimum hydraulic flow through rate of 5 gpm/ft². Bidders shall attach a copy of the research report indicating test methodologies utilized and results.

*Note: the Contractor is responsible for establishing a working erosion and sediment control system and may, with approval of the Engineer, work outside the minimum construction requirements as needed. Where the Inlet protection deteriorates or fails, it shall be repaired or replaced with an effective alternative.*

**DESIGN CRITERIA**

Inlet protection is used for curb inlet protection and curb sediment containment on paved surfaces by providing a physical barrier that reduces the rate at which sediment-laden runoff water can enter a storm drain. Inlet protection is also used around storm runoff drain inlets on soil surfaces where construction activities are ongoing and soil stabilization and erosion control measures are also employed. Inlet protection allows construction to continue while protecting storm systems from sediment overload. Inlets are normally protected until final vegetation and stabilization is complete, thereby reducing the amount of sediment reaching the storm inlets.

For most standard curb inlet protection applications, an 8 in (200mm) diameter Inlet protection is recommended; for drainage inlets...
receiving runoff where soils are not stabilized a 12 (300mm) in or 18 in (450mm) Drain Inlet protection may be specified.

For engineering design details of Inlet protection see Figure 2.1 and 2.2. For a summary of specifications for product/practice use, performance and design see Table 2.1 and Table 2.2.

**Planning:**

Inlet protection using Filtrexx® Inlet protection should not be considered the only form of site sediment control and should be used within an overall integrated Erosion and Sediment Control or Storm Water Pollution Prevention Plan. The blocking of storm drains by the use of Inlet protection should be considered in the overall site planning, especially where ponding water will create disturbances.

Preconstruction meetings should be conducted to educate construction site personnel about the E&SC devices used and acceptable traffic patterns that avoid running over Inlet protection with heavy equipment.

It is possible to drive over Inlet protection during construction (not recommended); however, these areas should be immediately repaired by manually moving Inlet protection back into place, if disturbed. Continued heavy construction traffic may destroy the material fabric, reduce the dimensions, and reduce the effectiveness of the Inlet protection.

**Device Function:**

The sediment and pollutant removal process characteristic to Inlet protection combines both filtering and deposition of solids. This is different than methods that rely solely on ponding for deposition of solids for sediment control. Ponding occurs when water flowing to the Inlet protection accumulates faster than the hydraulic flow through rate of the Inlet protection. Typically, hydraulic flow-through rates for Inlet protection are **50% greater** than geotextile filter fabric (silt fence). Greater hydraulic flow-through rates reduce ponding, therefore reducing the need for taller sediment control structural design height. However, installation and maintenance is especially important for proper function and performance.

**Pollutant Removal:**

Unlike most inlet protection devices, Inlet protection has been shown to remove pollutants other than total and suspended solids from storm water. Inlet protection has the ability to remove soluble pollutants, such as phosphorus and petroleum hydrocarbons (e.g. motor oil) from entering storm drains. Additional Filtrexx® products can be added to the Inlet protection to increase removal efficiency of target pollutants such as turbidity, TSS, and soluble phosphorus.

It should be noted that sediment removal efficiency can be near 100% unless runoff breaches the Inlet protection, at which point the effectiveness may be greatly diminished.

**Runoff Flow:**

Sheet and/or concentrated runoff flow should not exceed the hydraulic flow-through capacity, and ponding depth should not exceed the height of the Inlet protection. If overflow of the device is a possibility, larger diameter Inlet protection should be specified, other sediment control devices may be used, or management practices to reduce runoff should be implemented. For curb inlets, Inlet protection should not exceed the height of the intake opening. For curb sediment containment, Inlet protection should not exceed the height of the curb.

**Level Contour:**

Place Inlet protection on level contours to prevent diversion of runoff from storm inlets. Sheet flow of water should be perpendicular to the Inlet protection at impact. If Inlet protection is to be placed on a grade, care should be taken not to divert runoff from storm inlet.

**Runoff and Sediment Accumulation:**

Where possible, Inlet protection used for drain inlets
1.2. Filtrexx® Inlet Protection

should be placed at a 5 ft (1.5m) or greater distance away from the toe of the slope to allow for proper runoff accumulation for sediment deposition and to allow for maximum sediment storage capacity behind the device. If a 5 ft (1.5m) distance is not available, due to construction restrictions, a second Inlet protection may be installed to increase ponding and sediment accumulation capacity.

Vegetated Filter:
For permanent drain inlet applications Inlet protection can be direct-seeded to allow vegetation establishment directly in the device. Vegetation on and around the Inlet protection will assist in slowing runoff velocity which can increase deposition and filtration of pollutants. The option of adding vegetation will be at the discretion of the Engineer. No additional soil amendments or fertilizer are required for vegetation establishment in the drain Inlet protection. The appropriate seed mix shall be determined by the Engineer. This option is not normally available when using the tool on paved areas.

Drainage Area and Spacing:
Maximum drainage area contributing runoff to drain Inlet protection should be no more than 3 acres (1.2 ha). Drainage areas greater than 3 acres (1.2 ha) should implement sediment traps, sediment basins, or runoff reduction practices (KY TC, 2006).

Spacing between Inlet protection used for sediment containment along curbs is dependent on the grade of the roadway and can have an effect on the total sediment load reaching the curb inlet.

INSTALLATION

1. Inlet protection used for inlet protection to reduce sediment and soluble pollutants entering storm drains shall meet Filtrexx® FilterSoxx™ Material Specifications and use Certified Filtrexx® FilterMedia™.

2. Contractor is required to be a Filtrexx® Certified™ Installer as determined by Filtrexx® International, LLC (440-926-2607 or visit website at Filtrexx®.com). Certification shall be considered current if appropriate identification is shown during time of bid or at time of application (current list of installers can be found at www.Filtrexx®.com). Look for the Filtrexx® Certified™ Installer Seal.

3. Filtrexx® Inlet protection shall be placed at locations indicated on plans as directed by the Engineer. Inlet protection should be installed in a pattern that allows complete protection of the inlet area.

4. Installation of curb Inlet protection will ensure a minimal overlap of at least 1 ft (300mm) on either side of the opening being protected. The Inlet protection will be anchored to the soil behind the curb using staples, stakes or other devices capable of holding the Inlet protection in place.

5. Standard Inlet protection for curb inlet protection and curb sediment containment will use 8 in (200mm) diameter Inlet protection, and drain inlets on soil will use 12 in (300mm) or 18 in (450mm) diameter Inlet protection. In severe flow situations, larger Inlet protection may be specified by the Engineer. During curb installation, Inlet protection shall be compacted to be slightly shorter than curb height.

6. If Inlet protection becomes clogged with debris and sediment, they shall be maintained so as to assure proper drainage and water flow into the storm drain. In severe storm events, overflow of the Inlet protection may be acceptable in order to keep the area from flooding.

7. Curb and drain Inlet protection shall be positioned so as to provide a permeable physical barrier to the drain itself, allowing sediment to collect on the outside of the Inlet protection.

8. For drains and inlets that have only curb cuts, without street grates, a spacer is required in order to keep the Inlet protection away from the drain opening. This spacer should be a hog wire screen bent to overlap the grate opening and keep the sock from falling into the opening.

Table 2.3 Spacing for Curb Sediment Containment Systems.

<table>
<thead>
<tr>
<th>Grade (%)</th>
<th>Spacing (ft)</th>
<th>Spacing (mm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.5</td>
<td>100</td>
<td>30</td>
</tr>
<tr>
<td>1.0</td>
<td>50</td>
<td>15</td>
</tr>
<tr>
<td>2.0</td>
<td>25</td>
<td>8</td>
</tr>
<tr>
<td>3.0</td>
<td>16</td>
<td>5</td>
</tr>
<tr>
<td>4.0</td>
<td>13</td>
<td>4</td>
</tr>
<tr>
<td>5.0</td>
<td>10</td>
<td>3</td>
</tr>
</tbody>
</table>

at least one spacer for every 4 ft (1.2m) of curb drain opening. The wire grid also prevents other floatable waste from passing over the Inlet protection.

9. Stakes shall be installed through the middle of the Drain Inlet protection on 5 ft (1.5m) centers, using 2 in (50mm) by 2 in (50mm) by 3 ft (1m) wooden stakes.

10. Staking depth for sand and silt loam soils shall be 12 in (300mm), and 8 in (200mm) for clay soils.

INSPECTION
Routine inspection should be conducted within 24 hrs of a runoff event or as designated by the regulating authority. Inlet protection should be regularly inspected to make sure they maintain their shape and are producing adequate hydraulic flow-through. If ponding becomes excessive, additional Inlet protection may be required or sediment removal may be necessary. Inlet protection shall be inspected until contributing drainage area has been permanently stabilized and construction activity has ceased.

MAINTENANCE
1. The Contractor shall maintain the Inlet protection in a functional condition at all times and it shall be routinely inspected.
2. If the Inlet protection has been damaged, it shall be repaired, or replaced if beyond repair.
3. The Contractor shall remove sediment at the base of the upslope side of the Inlet protection when accumulation has reached 1/2 of the effective height of the Inlet protection, or as directed by the Engineer. Alternatively, for drain Inlet protection, a new Soxx™ may be placed on top of the original increasing the sediment storage capacity without soil disturbance.
4. Inlet protection shall be maintained until disturbed area above or around the device has been permanently stabilized and construction activity has ceased.
5. Regular maintenance includes lifting the Inlet protection and cleaning around and under them as sediment collects.
6. The FilterMedia™ will be removed from paved areas or dispersed on site soil or behind curb once disturbed area has been permanently stabilized, construction activity has ceased, or as determined by the Engineer.
7. Permanent vegetated filter strips will be left intact.

DISPOSAL/RECYCLING
Filtrexx® FilterMedia™ is an organic, composted product manufactured from locally generated organic, natural, and biologically based materials. Once all soil has been stabilized and construction activity has been completed, the FilterMedia™ may be dispersed with a loader, rake, bulldozer or similar device and may be incorporated into the soil as an amendment or left on the soil surface to aid in permanent seeding or landscaping. Leaving the FilterMedia™ on site reduces removal and disposal costs compared to other sediment control devices. The mesh netting material will be extracted from the FilterMedia™ and disposed of properly by the Contractor. Consequently, the mesh netting material is photodegradable and will decompose in 2 to 5 years if left on site. Biodegradable mesh netting material is available and does not need to be extracted and disposed of, as it will completely decompose in approximately 6 months. Using biodegradable Inlet protection completely eliminates the need and cost of removal and disposal.

METHOD OF MEASUREMENT
Bid items shall show measurement as ‘X in (X mm) Filtrexx® Inlet protection’ per linear ft (linear meter) installed, per inlet, or as specified by the Engineer. Engineer shall notify Filtrexx® of location, description, and details of project prior to the bidding process so that Filtrexx® can provide design aid and technical support.

REFERENCES CITED & ADDITIONAL RESOURCES


Faucette, L.B., A. Vick. 2006. LEED Green Building Credits using Filtrexx® Organic BMPs. Filtrexx® Tech Link #3301

Faucette, L.B., A. Vick, and K. Kerchner. 2006. Filtrexx®, Compost, Low Impact Development (LID), and Design Considerations for Storm Water Management. Filtrexx® Tech Link #3306

Faucette, L.B. 2006. Flow-Through Rate, Design
1.2. Filtrexx® Inlet Protection

Height, and Design Capacity of SiltSoxx™ and Silt Fence. Filtrexx® Tech Link #3304

Faucette, L.B. 2006. Design Height, Flow-Through Rate, and Slope Spacing of SiltSoxx™ and Silt Fence. Filtrexx® Tech Link #3311


**ADDITIONAL INFORMATION**

For other references on this topic, including trade magazine and press coverage, visit the Filtrexx® Website at: http://www.filtrexx.com/resourcespress.htm

For research reports not included in the Appendix, visit: http://www.filtrexx.com/resourcesreports.htm

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See website or call for complete list of international installers

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### Table 2.1. Filtrexx® Soxx™ Material Specifications.

<table>
<thead>
<tr>
<th>Material Type</th>
<th>3 mil HDPE</th>
<th>5 mil HDPE</th>
<th>5 mil HDPE</th>
<th>Multi-Filament Polypropylene (MFPP)</th>
<th>Multi-Filament Polypropylene “SafetySoxx™”</th>
</tr>
</thead>
<tbody>
<tr>
<td>Material Characteristic</td>
<td>Photodegradable</td>
<td>Photodegradable</td>
<td>Biodegradable</td>
<td>Photodegradable</td>
<td>Photodegradable</td>
</tr>
<tr>
<td>Design Diameters</td>
<td>5 in (125mm), 8 in (200mm), 12 in (300mm), 18 in (400mm)</td>
<td>5 in (125mm), 8 in (200mm), 12 in (300mm), 18 in (400mm), 24 in (600mm), 32 in (800mm)</td>
<td>8 in (200mm), 12 in (300mm), 18 in (400mm), 24 in (600mm), 32 in (800mm)</td>
<td>8 in (200mm), 12 in (300mm), 18 in (400mm), 24 in (600mm), 32 in (800mm)</td>
<td>8 in (200mm), 12 in (300mm), 18 in (400mm), 24 in (600mm), 32 in (800mm)</td>
</tr>
<tr>
<td>Mesh Opening</td>
<td>3/8 in (10mm)</td>
<td>3/8 in (10mm)</td>
<td>3/8 in (10mm)</td>
<td>3/8 in (10mm)</td>
<td>1/8 in (3mm)</td>
</tr>
<tr>
<td>Tensile Strength</td>
<td>ND</td>
<td>26 psi (1.83 kg/cm²)</td>
<td>26 psi (1.83 kg/cm²)</td>
<td>44 psi (3.09 kg/cm²)</td>
<td>202 psi (14.2 kg/cm²)*</td>
</tr>
<tr>
<td>% Original Strength from Ultraviolet Exposure (ASTM G-155)</td>
<td>23% at 1000 hr</td>
<td>23% at 1000 hr</td>
<td>ND</td>
<td>100% at 1000 hr</td>
<td>100% at 1000 hr</td>
</tr>
<tr>
<td>Functional Longevity/Project Duration</td>
<td>6 mo-2 yr</td>
<td>9 mo-3 yr</td>
<td>6-12 months</td>
<td>1-4 yr</td>
<td>2-5 yr</td>
</tr>
</tbody>
</table>

*Tested at Texas Transportation Institute/Texas A&M University (ASTM 5035-95).

### Table 2.2. Filtrexx® Inlet Protection Performance and Design Specifications Summary.

<table>
<thead>
<tr>
<th>Design Diameter</th>
<th>Design &amp; Performance</th>
<th>Effective Height</th>
<th>Effective Circumference</th>
<th>Density (when filled)</th>
<th>Air Space</th>
<th>Maximum continuous length</th>
<th>Staking Requirement</th>
<th>Maintenance Requirement (sediment accumulation removal at X height)</th>
</tr>
</thead>
<tbody>
<tr>
<td>8 in (200mm)</td>
<td>6.5 in (160mm)</td>
<td>25 in (630mm)</td>
<td>13 lbs/ft (20 kg/m)</td>
<td>20%</td>
<td>unlimited</td>
<td>unlimited</td>
<td>10 ft (3m)</td>
<td>3.25 in (80mm)</td>
</tr>
<tr>
<td>12 in (300mm)</td>
<td>9.5 in (240mm)</td>
<td>38 in (960mm)</td>
<td>32 lbs/ft (50 kg/m)</td>
<td>20%</td>
<td>unlimited</td>
<td>unlimited</td>
<td>10 ft (3m)</td>
<td>4.75 in (120mm)</td>
</tr>
<tr>
<td>18 in (450mm)</td>
<td>14.5 in (360mm)</td>
<td>57 in (1450mm)</td>
<td>67 lbs/ft (100 kg/m)</td>
<td>20%</td>
<td>unlimited</td>
<td>unlimited</td>
<td>10 ft (3m)</td>
<td>7.25 in (180mm)</td>
</tr>
<tr>
<td>24 in (600mm)</td>
<td>19 in (480mm)</td>
<td>75 in (1900mm)</td>
<td>133 lbs/ft (200 kg/m)</td>
<td>20%</td>
<td>unlimited</td>
<td>unlimited</td>
<td>10 ft (3m)</td>
<td>9.5 in (240mm)</td>
</tr>
<tr>
<td>32 in (800mm)</td>
<td>26 in (650mm)</td>
<td>100 in (2500mm)</td>
<td>200 lbs/ft (300 kg/m)</td>
<td>20%</td>
<td>Soil Control Lab, Inc</td>
<td>limited</td>
<td>10 ft (3m)</td>
<td>13 in (325mm)</td>
</tr>
</tbody>
</table>

(continued on next page)
Table 2.2. Filtrexx® Inlet Protection Performance and Design Specifications Summary. (continued)

<table>
<thead>
<tr>
<th>Initial Maintenance Requirement based on Rainfall-Runoff*</th>
<th>Functional Longevity**</th>
<th>Maximum Slope Length (&lt;2%)</th>
<th>Hydraulic Flow Through Rate</th>
<th>P Factor (RUSLE)</th>
<th>Sediment Storage Capacity***</th>
<th>Total Solids Removal</th>
<th>Total Suspended Solids Removal</th>
<th>Turbidity Reduction</th>
</tr>
</thead>
<tbody>
<tr>
<td>22 in (55 cm); 1109 L/linear m</td>
<td>2 – 5 yr</td>
<td>600 ft (183m)</td>
<td>7.5 gpm/ft (94 L/min/m)</td>
<td>0.1-0.32</td>
<td>174 cu. in (2850cc)</td>
<td>98%</td>
<td>78%</td>
<td>63%</td>
</tr>
<tr>
<td>32 in (80 cm); 1388 L/linear m</td>
<td>2 – 5 yr</td>
<td>750 ft (229m)</td>
<td>11.3 gpm/ft (141 L/min/m)</td>
<td>0.1-0.32</td>
<td>396 cu. in (6490cc)</td>
<td>98%</td>
<td>78%</td>
<td>63%</td>
</tr>
<tr>
<td>42 in (105 cm); 1825 L/linear m</td>
<td>2 – 5 yr</td>
<td>1000 ft (305m)</td>
<td>15.0 gpm/ft (188 L/min/m)</td>
<td>0.1-0.32</td>
<td>857 cu. in (14040cc)</td>
<td>98%</td>
<td>78%</td>
<td>63%</td>
</tr>
<tr>
<td>64 in (160 cm); 2779 L/linear m</td>
<td>2 – 5 yr</td>
<td>1300 ft (396m)</td>
<td>22.5 gpm/ft (281 L/min/m)</td>
<td>0.1-0.32</td>
<td>1631 cu. in (26840cc)</td>
<td>98%</td>
<td>78%</td>
<td>63%</td>
</tr>
<tr>
<td>86 in (215 cm); 3889 L/linear m</td>
<td>2 – 5 yr</td>
<td>1650 ft (500m)</td>
<td>30.0 gpm/ft (374 L/min/m)</td>
<td>0.1-0.32</td>
<td>2647 cu. in (43377 cc)</td>
<td>98%</td>
<td>78%</td>
<td>63%</td>
</tr>
<tr>
<td>The University of Georgia &amp; Auburn University</td>
<td></td>
<td>The Ohio State University, Ohio Agricultural Research and Development Center; University of Guelph, School of Engineering/Watershed Research Group</td>
<td>USDA ARS Environmental Quality Lab</td>
<td>USDA ARS Environmental Quality Lab</td>
<td>USDA ARS Environmental Quality Lab</td>
<td>USDA ARS Environmental Quality Lab</td>
<td>USDA ARS Environmental Quality Lab</td>
<td>USDA ARS Environmental Quality Lab</td>
</tr>
</tbody>
</table>
### 1.2. Filtrexx® Inlet Protection

#### Table 2.2. Filtrexx® Inlet Protection Performance and Design Specifications Summary. *(continued)*

<table>
<thead>
<tr>
<th>Component</th>
<th>65%</th>
<th>65%</th>
<th>65%</th>
<th>65%</th>
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<th>Filtrexx® Tech Link</th>
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<td>Clay (&lt;0.002mm) Removal</td>
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<td>Silt (0.002-0.05mm) Removal</td>
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<td>Filtrexx® Tech Link</td>
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<tr>
<td>TSS Removal w/PAM</td>
<td>97%</td>
<td>97%</td>
<td>97%</td>
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<td>USDA ARS Environmental Quality Lab</td>
<td>Filtrexx® Tech Link</td>
</tr>
<tr>
<td>TSS Removal w/Flocculent</td>
<td>97%</td>
<td>97%</td>
<td>97%</td>
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<td>97%</td>
<td>USDA ARS Environmental Quality Lab</td>
<td>Filtrexx® Tech Link</td>
</tr>
<tr>
<td>Turbidity Reduction w/PAM</td>
<td>98%</td>
<td>98%</td>
<td>98%</td>
<td>98%</td>
<td>98%</td>
<td>USDA ARS Environmental Quality Lab</td>
<td>Filtrexx® Tech Link</td>
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<tr>
<td>Turbidity Reduction w/Flocculent</td>
<td>94%</td>
<td>94%</td>
<td>94%</td>
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<td>94%</td>
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<tr>
<td>Total Phosphorus Removal</td>
<td>34%</td>
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<td>34%</td>
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*(continued on next page)*
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<th>Performance Category</th>
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<tbody>
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<tr>
<td>Total Phosphorus Removal w/ Nutrient Agent</td>
<td>60%</td>
<td>60%</td>
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<td>Reactive Phosphorus Removal w/ Nutrient Agent</td>
<td>99%</td>
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<tr>
<td>Nitrate-N Removal</td>
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<td>Ammonium-N Removal</td>
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<tr>
<td>Ammonium-N Removal w/ Nutrient Agent</td>
<td>33%</td>
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<tr>
<td>Motor Oil Removal w/ Hydrocarbon Agent</td>
<td>99%</td>
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<tr>
<td>Diesel Fuel Removal w/ Hydrocarbon Agent</td>
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<tr>
<td>Gasoline Removal w/ Hydrocarbon Agent</td>
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<tr>
<td>Cadmium (Cd) Removal w/ Heavy Metal Agent</td>
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<td>73%</td>
<td>73%</td>
<td>73%</td>
<td>73%</td>
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<tr>
<td>Chromium (Cr) Removal w/ Heavy Metal Agent</td>
<td>47%</td>
<td>47%</td>
<td>47%</td>
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<td>47%</td>
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<tr>
<td>Copper (Cu) Removal w/ Heavy Metal Agent</td>
<td>70%</td>
<td>70%</td>
<td>70%</td>
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<td>70%</td>
</tr>
</tbody>
</table>
Table 2.2. Filtrexx® Inlet Protection Performance and Design Specifications Summary. (continued)

| Nickel (Ni) Removal w/ Heavy Metal Agent | 69% | 69% | 69% | 69% | 69% | USDA ARS Environmental Quality Lab | Filtrexx® Tech Link |
| Lead (Pb) Removal w/ Heavy Metal Agent | 73% | 73% | 73% | 73% | 73% | USDA ARS Environmental Quality Lab | Filtrexx® Tech Link |
| Zinc (Zn) Removal w/ Heavy Metal Agent | 53% | 53% | 53% | 53% | 53% | USDA ARS Environmental Quality Lab | Filtrexx® Tech Link |
| Iron (Fe) Removal | 22% | 22% | 22% | 22% | 22% | Soil Control Lab, Inc |
| Manganese (Mn) Removal | 8% | 8% | 8% | 8% | 8% | Soil Control Lab, Inc |
| Total coliform Removal | 67% | 67% | 67% | 67% | 67% | USDA ARS Environmental Quality Lab | Filtrexx® Tech Link |
| E. coli Removal | 67% | 67% | 67% | 67% | 67% | USDA ARS Environmental Quality Lab | Filtrexx® Tech Link |
| Enterococcus Removal | 47% | 47% | 47% | 47% | 47% | USDA ARS Environmental Quality Lab | Filtrexx® Tech Link |
| E. coli Removal w/ Bacteria Agent | 98% | 98% | 98% | 98% | 98% | USDA ARS Environmental Quality Lab | Filtrexx® Tech Link |
| Fecal coliform Removal w/ Bacteria Agent | 98% | 98% | 98% | 98% | 98% | USDA ARS Environmental Quality Lab | Filtrexx® Tech Link |
| Enterococcus Removal w/ Bacteria Agent | 91% | 91% | 91% | 91% | 91% | USDA ARS Environmental Quality Lab | Filtrexx® Tech Link |

* Based on rainfall intensity of 12.5 cm (5 in)/hr applied to a bare clay loam soil at a 10% slope; runoff flow rate of 108 ml/sec/linear m (0.52 gpm/linear ft); and mean runoff volume of 230 L/m2 (6.3 g/ft2).
** Functional Longevity is dependent on UV exposure, freeze/thaw frequency, region of US/Canada, runoff-sediment frequency/duration/loading, and adherence to specified maintenance requirement.
*** Sediment Storage Capacity = sediment accumulation behind (directly upslope) + within the device.
Figure 2.1. Engineering Design Drawing for Curb and Drain Inlet Protection

DRAIN INLET PLAN

CURBSIDE OPTION “A” PLAN

CURBSIDE OPTION “B” PLAN

NOTES:
1. ALL MATERIAL TO MEET FILTREXX® SPECIFICATIONS.
2. FILTER MEDIA™ FILL TO MEET APPLICATION REQUIREMENTS.
3. COMPOST MATERIAL TO BE DISPERSED ON SITE, AS DETERMINED BY ENGINEER.

FILTREXX® INLET PROTECTION

NTS
1.2. Filtrexx® Inlet Protection

Figure 2.2. Engineering Design Drawing for Curb Sediment Containment Inlet Protection

**Filtrexx® Inlet Protection - Curb Containment**

**NOTE:**
1. Inlet protection should not be placed directly upslope from drain inlets.

**EXCESS SOXX™ MATERIAL TO BE DRAWN IN AND TIED OFF TO STAKE**

**FLOW**

**LENGTH VARIES**

**PLAN**

**SECTION**

**CURB**

**Filtrexx® 8" SOXX™**

**WIRE TIED SOXX™ END**

**CURB**

**Filtrexx® 8" SOXX™**

**EXCESS SOXX™ MATERIAL TO BE DRAWN IN AND TIED OFF TO STAKE**

**FLOW**

**SPACING VARIES REFER TO SPECS**

**NOTE:**
1. Inlet protection should not be placed directly upslope from drain inlets.