

# **Specifications for Municipal Deployment of Catch Basin Insert Filters**

Municipality of \_\_\_\_\_  
State of \_\_\_\_\_

Contract Number \_\_\_\_\_

## **PART 1.00 SCOPE**

### **1.1 General Description**

This specification describes a post developed catch basin filtration device that treats for suspended solids, oils and grease, dissolved and particulate phosphorus, pathogens, and heavy metals and is installed in new or existing stormdrain infrastructure that consist of drop, combo or curb only inlets that are round, square or rectangular in shape.

Municipal separate storm drains selected for treatment are those located in high traffic areas, municipal parking lots, public right of ways and environmentally sensitive areas draining to impaired open water bodies and are identified on the site location map located in Attachment A.

The size range of the existing grate type catch basins selected for retrofit are itemized in Attachment B. The final design size shall be verified and confirmed in the field by the Municipality and the selected vendor prior to acceptance of a purchase order and manufacturing/delivery of materials. Either the Municipality or vendor shall develop and furnish a worksheet similar to the one included in Attachment C to measure and certify the actual condition of the catch basins.

### **1.2 Submittals**

The contractor and/or municipality shall be provided with engineering details or standardized top drawings of the catch basin filter device and, when specified, utilize these drawings for approval. Drawings shall be annotated to indicate overall physical dimensions (WXLXH), all materials to be used, all applicable standards for materials, and design assumptions.

## **PART 2.00 PRODUCTS**

### **2.1 General Configuration:**

This technology is a post developed stormwater treatment system. The StormBasin provides effective filtration of pollutants and debris typical of urban runoff, while utilizing the existing or new storm drain infrastructure. The StormBasin is designed to rest on the flanges of conventional catch basin frames and is engineered for most hydraulic and cold climate conditions.

The device shall provide for isolation of trapped pollutants, including debris, sediments, and floatable trash and hydrocarbons from bypass flow in order to minimize suspension during peak flows.

Water suspended pollutants such as oils and grease, pathogens, heavy metals and nutrients shall be treated by a radial downflow cartridge system that uses a filter medium designed to be non-leaching, non-biodegradable and safe for outdoor use.

## 2.2 Flow Capacity:

The cartridge specified shall effectively filter the water quality flow rates from a frequently occurring rainfall event and shall provide at least one mode of bypass. Under normal functioning conditions, a single cartridge shall be able to handle flow rates up to XX cfs (lps) at XX ft (m) of driving head as documented through hydraulic testing of a clean cartridge.

High flows that exceed the treatment capacity of the filter cartridge, either clean or during the normal course of service, must be able to escape through overflow ports that are provided at the top of the insert.

<b>Performance Parameter</b>	<b>StormBasin Model XXXX</b>
Cartridge Flow Rate, gpm/lps	
Primary Bypass Flow Rate, gpm/lps	
Secondary Bypass Flow Rate, gpm/lps	
Total Bypass Flow Rate, gpm/lps	

## 2.3 Performance Characteristics and Testing

The water quality insert device shall have been tested by the manufacturer in the field and the in laboratory in order to demonstrate pollutant removal efficiency at flow rates at or near the cartridges filtration capacity. Manufacturer may be required to submit test data to the Municipality or agency indicating the proposed device has been shown to achieve removal rates within the ranges specified in the table below.

<b>Performance Parameter</b>	<b>Percent Removal Range</b>
Sediment removal Based on U.S. Silica OK 110	at least 80 %
Hydrocarbons, Oils and Grease	at least 80 %
Total Phosphorus	40 to 60%
Nitrogen Compounds	30 to 50 %
Bacteria	50 to 70%
Heavy Metals	40 to 60%

### 2.3 Materials:

The support frame for the StormBasin shall be composed of Aluminum Alloy 6063-T6. Consideration may be given to alternate materials provided they have shown longevity of at least 5-years in cold climate environments exposed to freeze thaw cycles and winter deicing materials (road sand and salts). A complete list of material of construction and pertinent material properties are included in the table below.

<b>StormBasin Item</b>	<b>Materials or Mechanical Properties</b>
Basin Plastic	Polypropylene\polyethylene copolymer
Adjustable flange and deflector	Aluminum Allow 6063-T6
Splash guard	Neoprene Rubber
Corner Filler	Aluminum Alloy 5052-H32
Support Hardware	CRES 300 Series
Aluminum Allow 6063-T6	Yield Strength 40,000 PSI (275 MPa)
	Tensile Strength 45,000 PSI (310 MPa)
	Shear Strength 30,000 PSI (206 MPa)
Neoprene Splash Guard	Thickness 0.25 inches (6.4 mm)
	Temperature Rating -45 °F to 250 °F (-42.7 C to 121 °C)
	Durometer 80
Co-Polymer (Injection Molded)	Tensile Strength 3,200 PSI
	Heat Deflection Temperature @ 66 PSI (455 KPa): 175 °F (79.4 °C)
	Notched IZOD Impact Strength @ 73 °F (22.7 °C): No Break

## 2.4 Clearance

Recommended minimum clearance from bottom of cartridge to inside bottom of vault or resting water surface is 2 inches (50 mm).

## 2.5 Frame Adjustability

Typical frame adjustability range of 5 inches (127 mm) in each direction.

## 2.6 Delivery, Storage and Handling

All materials shall be protected during loading, transportation and unloading, in accordance with the manufacturer's recommendations.

## 2.7 Manufacturer

The manufacturer of said system shall have been regularly engaged in the engineering design and production of systems for physical treatment of stormwater runoff for a minimum of 8-years. The StormBasin shall be supplied by FABCO Industries, Inc., 66 Central Avenue, Farmingdale, NY 11735, phone 631.393.6024 or an approved Distributor\Representative of the product.

## PART 3.00 INSTALLATION and MAINTENANCE

Installation procedures shall include removing the storm grate, cleaning the ledge of debris and solids, measuring catch basin clear opening and adjusting flanges to rest on grate support ledge. Install StormBasin so the adjustable flanges are resting on the grate support ledge. Install corner filler pieces. Reinstall storm grate directly on support flanges [rise shall be no more than 1/8 inch (3 mm)].

Maintenance: Typically the StormBasin is serviceable from the street level, and therefore maintenance does not require confined space entry into the catch basin structure. The unit is designed to be maintained in place with a vacuum hose attached to a sweeper or a vactor truck. The filter cartridges are also designed to easily be replaced from the street level. Use only FABCO replaceable parts.

END OF SECTION