



Storm Water Products

What are Catch Basin inserts



Compact water filtering systems that are designed to be installed into existing roadside drains commonly called a catch basin



StormBasin[®]

modular stormwater filtration system

Catch basin insert

The StormBasin



- Fits flat or combination style catch basin designs
- Rests on the frame below the metal grate
- Lifts the grate less than 1/8"
- Requires only 28" of depth below the frame

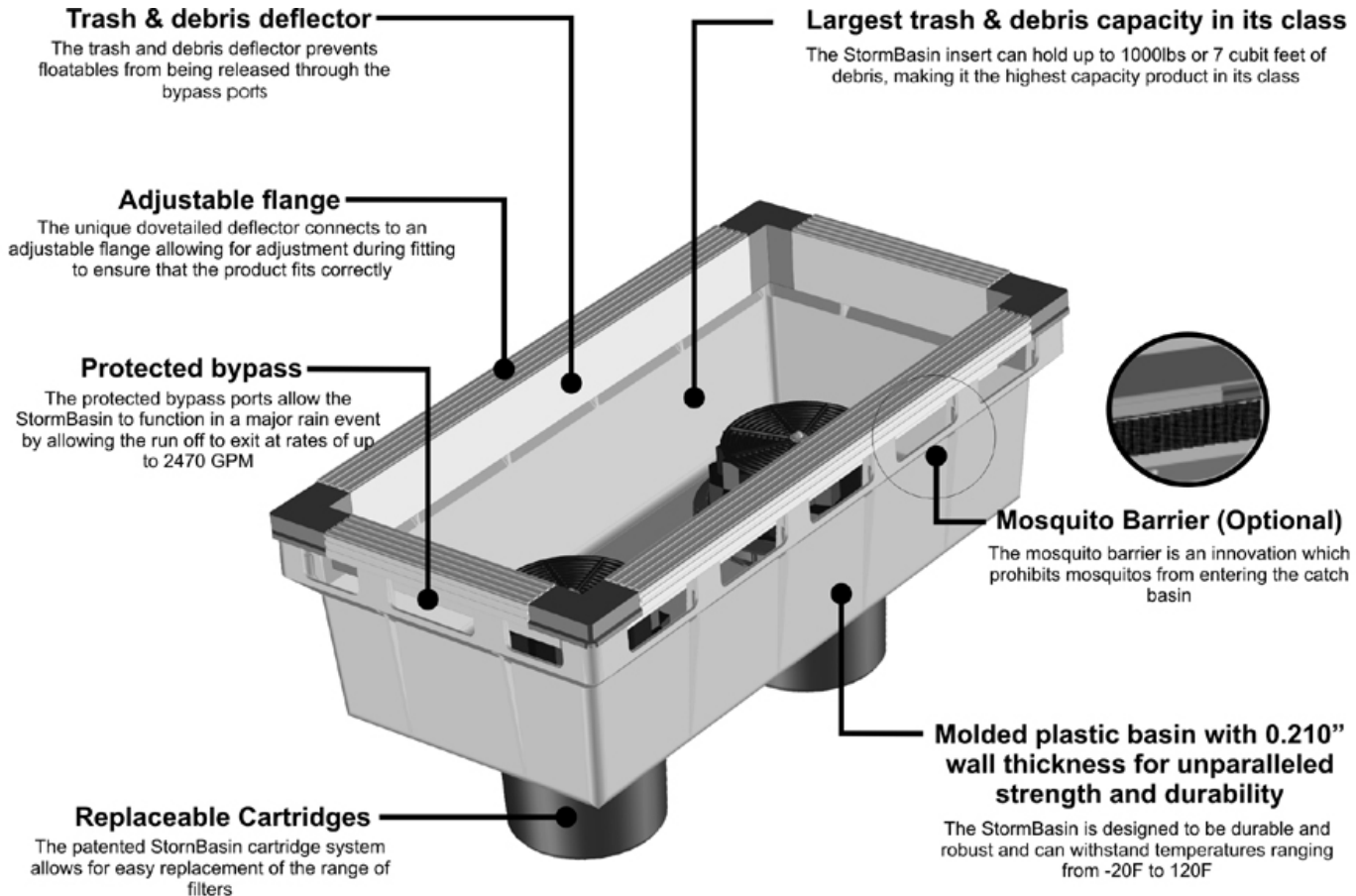


Flat Grate



Combination

StormBasin Features



Total Weight: under 40lbs with 2 cartridges

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Cartridges

Cartridge Design Goals




Capture a wide range of storm water pollutants

- Suspended solids – sediments
- Oils, grease, Petroleum hydrocarbons
- Heavy metals; Cadmium, Lead, Zinc
- Insecticides, pesticides
- Pathogens/Bacteria

While providing:

- High flow rate
- Simple & Safe installation
- Low cost disposal

Traffic-generated constituents in storm water



FUEL SYSTEM		
- VOCs		
- petroleum		
BODY/FRAME		
- Zn, Cr, Fe, Al		
ENGINE		
- Zn, Cu, Cr, Mn		
- Oil, grease		
TIRES		PAVEMENT
BRAKES	- Zn (3.0 mg/vehicle-km)	- solids (1-10,000+ μm)
- Cu, Pb	- Cd (0.02 mg/vehicle-km)	- PAHs (asphalt)
EXHAUST	- solids (mean dia. = 20 μm)	- phenols (asphalt)
- particulates	- solids ($\rho_s = 1.6$)	- thermal (asphalt)

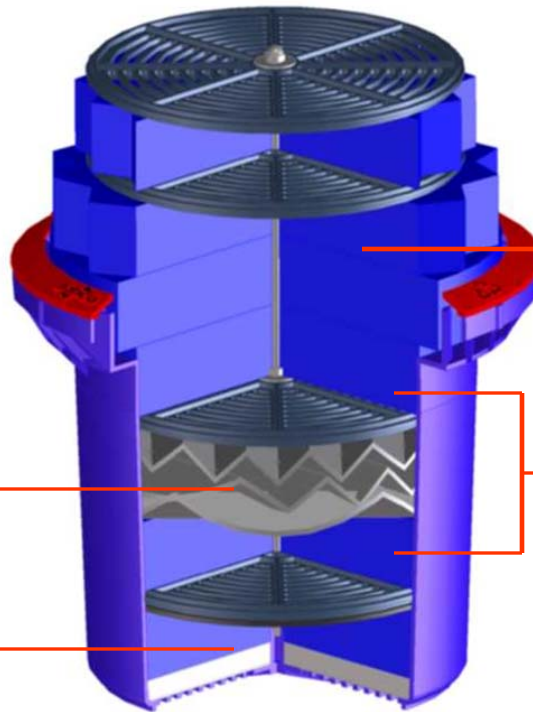
The Nature and Control of Urban Storm Water - A Physical Chemical Perspective, John J. Sansalone, Ph.D., P.E., Louisiana State University

StormBasin Cartridge



FABSORB pad
absorbs 10 times its
weight in oils/grease

FABGUARD
Antimicrobial



FABGUARD treated
foam pads restrict flow
of pathogens and
bacteria through the filter
and protects cartridge
from blinding

FABMAX, patented
media treats,
hydrocarbons,
pesticides, oil sheen,
chlorinated organics

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Validation

Sediments & Solids



Excellent for trash and debris

- The plastic basin provide space for storage
- Covered bypass retains captured material
- Rear rubber flap extends into rear curb box directing water and debris into the filter box



Testing



Fabco has performed initial testing on:

- Oils, grease and hydrocarbon Compounds
- Bacteria: E.Coli, Fecal Coliform and Enterococcus
- Heavy Metals: Lead, Zinc and Chromium
- Nutrients: Phosphate and Nitrogen Compounds



Performance data



Over 90% effective on hydrocarbons

Synthetic Storm water matrix	
Component	% by volume
Gasoline	0.3
#2 Diesel	12.9
10W-30 motor oil	64.6
Brake Fluid	3.2
Antifreeze (glycol based)	9.5
Windshield Washer Fluid	9.5



Analytical Parameters	Flow rate gpm	Units	Before sample	After Sample	% Change
Oil and Grease	80	mg/L	64	< 5	92.2
	100	mg/L	55	< 5	90.9

EcoTest Laboratories, Inc . 377 Sheffield Ave . North Babylon, NY 11703
 EPA Lab code NY 00038; NY lab ID 10320

Performance data



Treatment of Bacteria:

Field testing at a local beach showed:

A greater than 77% reduction in E.coli and Fecal Coliform counts

And a 49% decrease in Enterococcus bacteria

The picture on the right shows a Fabco engineer connecting sampling tubes from the bottom of the filter cartridges to an automated water sampler.

Use of this sampler allowed samples to be taken at the beginning of a rain event (first flush) and also at some point during the event. This second in process measurement confirmed continuous treatment effectiveness



Performance data



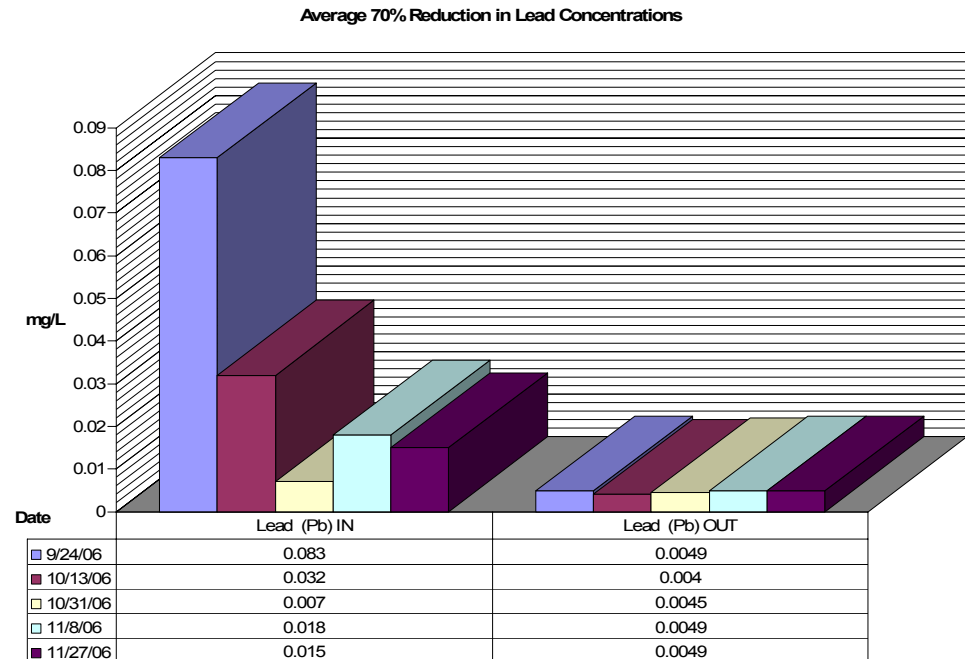
Heavy Metals reductions:

Discrete samples of treated and untreated runoff were tested simultaneously for heavy metals. The results showed:

Lead by nearly 72%

Chromium by over 65%

Zinc by 57%



Performance data



Testing on Phosphates and nitrogen compounds confirmed a 70% reduction in Total Phosphates and a 40% reduction in Total Nitrogen

The picture shows the Fabco StormPod that was used for the field study.

Each black tube accepts 1 white plastic sample bottle.

The black tubes are then attached to either the bottom of the cartridge or a large hole drilled in the bottom of the basin.

During a rainstorm, the bottles representing treated and untreated water automatically collect a sample simultaneously



Specifying the StormBasin



Specifying the StormBasin;

- Parking Lots
- Gas Stations/refueling areas
- Transportation Depots
- Maintenance yards
- Industrial sites
- Waste transfer stations
- Storm sewer systems that drain directly into sensitive bodies of water



Treatment Train



High efficiency sweepers



"Cost-effective BMP in an urbanized environment"

A Clean sweep to swipe pollutants, Stormwater magazine

"Sharply reduce the amount of urban runoff flowing from storm drains to the ocean"

*Street Sweepers stage comeback ;
The Los Angeles Times., Los Angeles, CA.,
Sep 24, 2001*

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StormBasin Filters



Summary



StormBasin

- Cost effective
- Durable
- Lightweight design
- featuring replaceable filter cartridges that can be optimized for identified pollutant loads

