

Grate Inlet Skimmer Box

I. Specifications

Track Record: The Grate Inlet Skimmer Box is manufactured by a company whom is regularly engaged in the engineering design and production of treatment systems for stormwater. Grate Inlet Skimmer Box has been installed and in use as designed in field locations for a duration of over 10 years.

Coverage: The grate inlet skimmer box provides full coverage of inlets such that all catch basin influent, at rated flows, is conveyed to the filter. The filter will retain all windblown and swept debris entering the drain.

Non-Corrosive Materials: All components of the filter system, including mounting hardware, fasteners, support brackets, filtration material, and support frame are constructed of non-corrosive materials (316 stainless steel, and UV/marine grade fiberglass). Fasteners are stainless steel. Primary filter mesh is 316 stainless steel welded screens. Filtration basket screens for coarse, medium and fine filtration is ¾" x 1 ¾" expanded, 10 x 10 mesh, and 35 x 35 mesh, respectively. No polypropylene, monofilament netting or fabrics shall be used in the product.

Durability: The Grate Inlet Skimmer Box is constructed of an all fiberglass frame and stainless steel screens backed by ½ x ½-diamond plate stainless steel. Filter (excluding oil absorbent media) and support structures are of proven durability, with an expected service life of 10 to 15 years. The filter and mounting structures are of sufficient strength to support water, sediment, and debris loads when the filter is full, with no slippage, breaking, or tearing. All filters are warranted for a minimum of five (5) years.

Oil Absorbent Media: The filter is fitted with an absorbent media for removal of petroleum hydrocarbons from influent, and so placed in the filter assembly to treat influent at rated flow. Absorbent media is easily replaceable in the filter, without the necessity of removing fixed mounting brackets or mounting hardware. Hydrocarbon media is placed in a separate trough located at the top of the filter unit. The hydrocarbon media encompasses the total perimeter of the unit and lie horizontal for maximum absorption.

Overflow Protection: The drain filter is designed so that it does not inhibit storm flows entering the grate inlet, or obstruct flow through the catch basin during peak storm flows.

Filter Bypass: Water will not bypass the filter at low flows, nor bypass through attachment and inlet contact surfaces at low flows.

Pollutant Removal Efficiency: The Grate Inlet Skimmer Box is designed to capture high levels of trash and litter, grass and foliage, sediments, hydrocarbons, grease and oil. The filter has a multistage filtration system, which incorporates three mesh sizes and an overflow opening.

POLLUTANT	Grate Inlet Skimmer Box
Trash & Litter	90 to 95%
Oil & Grease	54% to 95%
Sediments/TSS	73% to 84.41%
Organics	79.3%
Total Nitrogen	65 to 79%
Total Phosphorus	71 to 98%

Non-Scouring: During heavy storm flows or other flows that bypass the filter, the filter water turbulence deflection shield prevents washout of debris and floatables in the filter basket.

Filter Removal: The filter basket is readily removable from the mounting/support frame for maintenance or replacement. Removal and replacement of filter screens is accomplished without the necessity of removing mounting bolts, support frames, etc., but by lift out through the grate inlet. The filter also incorporates a removable water turbulence deflector shield and an overflow shield.

II. Installation

Installation: The filter will be securely installed in the grated type catch basin, so that no filter bypass can occur at low flow. If any anchoring devices and fasteners are installed within the interior of the drain inlet they should be non corrosive

metals. The filter basket is located in the catch basin directly beneath a grate opening for direct service/access from the manhole.

Installation Notes:

1. Bio Clean Environmental Services, Inc. notes that the filter shall be installed pursuant to the manufacturer's recommendations and the details on this sheet.
2. The filter insert shall provide coverage of entire inlet opening, to direct all flow to insert.
3. To install the filter insert, lift the grate.
4. Place filter insert into catch basin, the flange of the insert should sit on same lip that grate sits on. The perimeter area of catch basin can be caulked to prevent water from entering catch basin under flange.
5. Grate can be replaced into catch basin, resting on the flange of the insert basket.
6. In instances where filter insert cannot sit on catch basin lip an alternative installation as follows: Grate is removed and aluminum "L" channel can be placed on 2 or 4 sides on catch basin walls approximately 2 inches below lip where grate sits. The "L" channel to be attached to side of catch basin with ¼" drive pins. Basket can be then set on the "L" channel and caulked. Grate can then be placed back into catch basin, resting on catch basin lip.
7. Diagrams of both of these types of installation can be seen on Cut Sheets.

III. Maintenance

Maintenance: The filter is designed to allow for the use of vacuum removal of captured materials in the filter basket, serviceable by centrifugal compressor vacuum units without causing damage to the filter or any part of the mounting and attachment hardware during normal cleaning and maintenance. Filters can be cleaned without entering the catch basin.

Maintenance Notes:

1. Bio Clean Environmental Services Inc. recommends cleaning and maintenance of the Grate Inlet Skimmer Box a minimum of four times per year or following a significant rain event that would potentially accumulate a large amount of debris to the system. The hydrocarbon boom should be replaced a minimum of twice per year or at each service as needed.
2. Any person performing maintenance activities that require entering the catch basin or handle a toxic substance have completed the proper training as required by OSHA.
3. Remove grate to gain access to inlet filter insert. Remove the Deflector Shield with the hydrocarbon boom attached. Under normal conditions, cleaning and maintenance will be performed from the above ground surface.
4. Special Note: entry into a underground manhole, catch basin or stormwater vault requires training in an approved OSHA Confined Space Entry Program.
5. Remove all trash, debris, organics, and sediments collected by the inlet filter insert. Removal of the trash and debris can be done manually or with the use of a vactor truck. The hose of the vactor truck will not damage the screen of the filter.
6. Evaluation of the hydrocarbon boom shall be performed at each cleaning. If the boom is filled with hydrocarbons and oils it should be replaced. Remove boom by cutting plastic ties and remove boom. Attach new boom to basket with plastic ties through pre-drilled holes in basket.
7. Place the Deflector Shield back into the filter. Replace grate.
8. Transport all debris, trash, organics and sediments to approved facility for disposal in accordance with local and state requirements. The hydrocarbon boom with adsorbed hydrocarbons is considered hazardous waste and needs to be handled and disposed of as hazardous material. Please refer to state and local regulations for the proper disposal of used motor oil/filters.
9. Following maintenance and/or inspection, the maintenance operator shall prepare a maintenance/inspection record. The record shall include any maintenance activities performed, amount and description of debris collected, and condition of filter.
10. The owner shall retain the maintenance/inspection record for a minimum of five years from the date of maintenance. These records shall be made available to the governing municipality for inspection upon request at any time.
11. Any toxic substance or item found in the filter is considered as hazardous material and can only be handled by a certified hazardous waste trained person (minimum 24-hour hazwoper).