

# **ENVIROPOD**® **MANUAL**



Installation  
Operation  
Maintenance



Drop-In EnviroPod



Curb Entry Manhole EnviroPod

  
**ENVIROPOD**®  
Humes Pipeline Systems is  
a distributor of EnviroPod  
for Stormwater360



## INTRODUCTION

Stormwater pollution is the leading cause of environmental degradation in New Zealand. Urban environments produce contaminants, which are discharged onto impervious surfaces. When it rains contaminants such as lead, copper, zinc and PCBs are washed from these impervious surfaces into the stormwater system and eventually discharged into harbours, streams, rivers and aquifers.

EnviroPod® is a proven catchpit insert that removes a significant portion of sediment, trash, debris and other pollutants from water entering the stormwater system. It can be installed in curb inlet catchpits, standard pre-cast catchpits or manhole catchpits. Using low-cost passive screening and optional oil-absorbent media, EnviroPod® can be customised to meet site-specific requirements with several available mesh screens. 200 micron polyester filter mesh bags are supplied as standard (unless specified otherwise). This filter mesh has a moderate / high removal rate and a moderate maintenance requirement.

EnviroPod® is also effective as a pre-treatment device for use in a treatment train with hydrodynamic separators, filtration, ponds and wetlands. In many cases, it is often the most practical solution for retrofits.

## Design and Operation

EnviroPod® consists of a screening bag supported by a filter box and structural cage. Modular plastic deflector panels attach to the filter box and guide the flow of water to the screening bag. The screening bag captures pollutants and allows the water to pass through to the outlet pipe. Optional absorbent material inside the screening bag captures oil and grease. Openings in the filter box allow water to bypass the screening bag during high flow conditions to prevent surface flooding.

## Configurations

**Drop-In EnviroPod®** is designed to simply insert into the catchpit below the grate and rest on the base of the pit. Plastic deflector panels seal against the pit walls and direct flow into the filter box and through the mesh screens. There are two standard sizes available that will fit most pre-cast regular and curb entry catchpits. Custom designs are able to be fabricated for non-standard pits.

**Curb Entry Manhole EnviroPod®** is inserted through the manhole access cover and is supported by two stainless steel, or galvanised mild steel, arms fixed to the curb channel. Plastic deflector panels are then cut to custom fit specific manhole diameters.

## Capabilities

- Captures sediment, trash, debris and other pollutants before they enter the storm drain system;
- Fits standard, curb entry and manhole catchpits;
- Easy access – maintenance friendly design;
- Fits a range of catchpit sizes – ideal for retrofits;
- Adjustable panels allow fine-tuning during installation for a perfect fit.

## **INSTALLATION / INSPECTION / MAINTENANCE**

### ***Traffic Control***

Traffic control must be well planned when installing, inspecting or maintaining EnviroPod® filters. All standard rules and regulations governing Traffic Control and Safety while Working on the Road must be rigidly followed at all times. All potential hazards must be identified and control methods put in place prior to installing, inspecting or maintaining filters.

### ***Health and Safety***

All contractors should comply with all current Health and Safety Legislation and take all practicable steps to:

- Comply with all applicable Laws, Regulations and Standards.
- Ensure that all Employees, Contractors and Visitors are informed of and understand their obligations in respect of current Health and Safety Legislation.
- Ensure that employees understand and accept their responsibility to practice and promote a safe and healthy work environment.

All relevant precautions must be taken to prevent contact with sediment and litter when installing, inspecting or maintaining filters. Stormwater sediments can contain lead, copper, zinc, mercury and PCBs as well as other harmful constituents. The following Personal Protective Equipment (PPE) should be worn at all times:

- Puncture resistant gloves;
- Steel capped safety boots;
- Fluorescent safety vest;
- Safety apron (optional);
- Overalls or similar skin protection;
- Eye/ear protection if necessary;
- Where there is a need to proceed in a confined space, the space shall be inspected for gas/fumes. Safety equipment must be worn where deemed necessary and where gas or oxygen hazard occurs. Breathing apparatus gear will only be used by staff trained in its use. Non trained staff must not enter confined spaces.

## Installation Procedure

The Contractor shall furnish all labour, materials, equipment and incidentals to install Enviropod® catchpit inserts. The installation crew is responsible for adhering to all Traffic Control and Health and Safety regulations, including any confined spaces entry requirements. Note – prior to installing Enviropod® into an in-service catchpit, all sediment and debris must be removed from the chamber.

### Standard Pre-cast Catchpit Enviropod®

Installation of the standard drop-in Enviropod® is described in the following sequence:

1. Open catchpit grate and measure catchpit depth.
2. Cut cage to height (top of cage to be cut at a height 200 mm below underside of catchpit grate frame) and position removable base approximately 100 mm from base of cage (higher if any cross-flow through the pit required).



3. Enviropod®s are shipped with oversize deflector panels. The deflector panels are cut to size using a box-knife and straight-edge to fit the pit opening. Allow approximately 20 mm over and above the pit dimension to ensure deflector panels seal against the pit walls at an angle to assist the flow into the filter box. Apply polyurethane sealant if necessary to ensure a watertight seal around the filter box.



4. Thread the Enviropod® filter bag onto the stainless steel ring ensuring the loose ends of the stainless steel ring are joined together in the connector tube. Place the bag into the filter box making sure that the ring is seated evenly on the filter box support lip then close the catchpit grate.

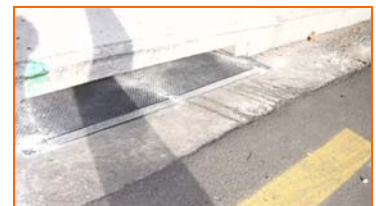


## Installation Procedure

### Curb Inlet Manhole EnviroPod®

Installation of the **Manhole EnviroPod®** is described in the following sequence:

- 1) Open Access cover located in footpath or road berm and measure manhole depth.
- 2) Cut cage to height (top of cage to be 100 mm below invert of curb entry opening) and position removable base approx. 100 mm from base of cage (higher if any cross-flow through the pit is required). Insert cage through access hatch and locate onto the pit base.
- 3) Two stainless steel or galvanised mild steel arms are attached to the pre-drilled holes at the top of the filter cage and dyna-bolted to the curb at either side of the curb entry opening using the bolts provided (arms are to be cut to length if required and any exposed steel to be painted with 'cold galv.' paint if applicable).
- 4) The manhole EnviroPod®s are shipped with two oversize semi-circular deflector panels for the manhole size specified and a third curb entry deflector panel. The semi-circular deflector panels are trimmed to size using a box-knife to fit the pit opening. The panels are then fixed to the lugs at the top of the filter frame, with the panel closest to the curb entry lapping over the top of the other semi-circular panel. Apply polyurethane sealant around panel edges if necessary to ensure a watertight seal around the filter box. The third deflector panel is then cut to size to intercept all inflow from the curb entry and direct it into the filter. A third stainless steel or galvanised mild steel bar is cut length if necessary and dyna-bolted to the curb to secure the deflector panel.
- 5) Thread EnviroPod® filter bag onto stainless steel ring ensuring the loose ends of the stainless steel ring are joined together in the connector tube. Place the bag into the filter box making sure the ring is seated evenly on the filter box support lip, and then close the manhole access cover.



## Inspection and Maintenance

The system must be monitored and maintained in accordance with relevant local authority guidelines.

EnviroPod® installations vary due to the vast number of catchpit configurations and site conditions. These guidelines should apply to most cases as written. For the remaining cases, follow the general actions of these guidelines, varying them as necessary.

Typically 200 micron filters should be serviced every three months, depending on local site conditions and number of vehicle movements. The frequency of maintenance services should be reviewed at the completion of each service and modified if pollutant loadings deem this necessary. At the required maintenance interval the contaminants need to be removed from the filter bags and disposed of appropriately.

The maintenance crew is responsible for disposing of debris in accordance with all applicable regulations and is responsible for following all applicable regulations, including confined space entry requirements.

Contact Humes Pipeline Systems for more information or to order EnviroPod filter bags and oil absorbent pouches.

## Maintenance using Vacuum Truck

Maintenance utilising a vacuum inductor truck is the preferred option for cleaning EnviroPod® filters. Hand maintenance is discouraged as it can lead to damage of the filters and has Health and Safety implications with sediments often being highly contaminated. Filters are also capable of storing a large weight of material.

1. Establish a safe working area per typical catchpit service activity;
2. Remove grate / access cover;
3. Vacuum accumulated debris from the upper portion of the catchpit;
4. Remove and inspect the oil absorbent pouches (If applicable) clipped to the inside of the EnviroPod® bag. Replace with new pouches in step 8 if the pouches are dark with oil;
5. Vacuum contents from bag. Once most of the material is removed, remove the bag from the EnviroPod® with two lifting hooks through the loops at the top of the bag. Inspect filter bag and repair or replace if damaged;
6. Remove stainless steel ring from top of bag and rejuvenate bag by washing using a double cold wash, or water blast at an approved cleaning site;
7. Place rejuvenated bag in EnviroPod®. CRITICAL – Make sure the loose ends of the stainless steel ring are joined together in the connector tube;
8. Re-install oil absorbent pouches (if applicable);
9. Replace grate.

**IMPORTANT: Under no circumstances are catchpit sediments to be backwashed into the catchpit.**

## Hand Maintenance

1. Establish a safe working area per typical catchpit service activity;
2. Remove grate / access cover;
3. Remove the bag from the EnviroPod® with two lifting hooks through the loops on the top of the bag. Excess debris should be scooped out first if the bag is over half full;
4. Remove and inspect the oil absorbent pouches (if applicable) clipped to the inside of the EnviroPod® bag. Replace with new pouches in step 8 if the pouches are dark with oil;
5. Pour contents of the bag into a disposal container. Inspect filter bag and repair or replace if damaged;
6. Remove Stainless steel ring from top of bag and rejuvenate bag by washing using a double cold wash, or water blast at an approved cleaning site;
7. Place rejuvenated bag in EnviroPod®. CRITICAL – Make sure the loose ends of the stainless steel ring are joined together in the connector tube;
8. Re-install oil absorbent pouches (if applicable);
9. Replace grate.

### NOTE:

A visual examination of the filter structure and filter media is to be carried out. The structure is to be visually checked for failure or movement and that filterboxes are sealing sufficiently. If any structural failure has occurred it is to be remedied, or reported to the filter owner for remedial works.

## Spill Procedures

In the advent of a spill discharging into any EnviroPod® all sediment is to be removed from catchpit and filters are to be removed and replaced with rejuvenated filter bag immediately. Normal maintenance procedures apply to additional cleaning as a result of spills.

## Blockages

In the unlikely event of surface flooding around a catchpit fitted with EnviroPod® the following steps should be carried out:

- 1) Check overflow bypass mechanism that has been built into the EnviroPod®'s filter box. If surface flooding exists check the overflow slots underneath the rubber seal. If debris is lodged in the overflow slots these can be easily cleared by hand or steel rod.
- 2) If the overflow is clear and surface flooding still exists remove EnviroPod® and check outlet pipe for blockages.
- 3) Removal of the EnviroPod® may be difficult if the filter is clogged and the EnviroPod® is holding water. If the filter is clogged, brush the surface of the filter with a yard broom or similar. This will dislodge particles trapped at the interface allowing contained water to flow through the filter.

4) If the outlet pipe is blocked, it is likely that a gully sucker truck will be required to unblock it. Debris should be removed from the EnviroPod® with the gully sucker truck before removal of the EnviroPod® filter.

If a gully sucker truck is not available and the EnviroPod® needs to be removed by hand, follow the steps below;

- Remove excess debris by hand or brush the side of the filter;
- Lift and place filter ring through the filter box and into cage;
- Remove filter box;
- Lift cage containing filter bag and ring out of the pit;
- Unblock outlet pipe.

## Audit Procedures

The maintenance contractor is to provide documentation that all maintenance requirements are being carried out. Attached is an example of documentation to be provided by the cleaning contractor.

Records of maintenance operations for the property are to be kept on site and are to be made available for Local Council compliance inspections.

Buyers and users of the product described in this brochure must make their own assessment of the suitability and appropriateness of the products for their particular use and the conditions in which they will be used. All queries regarding product suitability, purpose or installation should be directed to the nearest Humes Sales Centre for service and assistance.

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## *EnviroPod<sup>®</sup> Service Receipt*

<b>Site:</b>		<b>Job Number:</b>	
<b>Contractor:</b>		<b>Receipt Number:</b>	
<b>Location:</b>		<b>Week Serviced:</b>	
		<b>Year:</b>	

<b><u>Service Frequency:</u></b>	
<b><u>EnviroPod<sup>®</sup> s on Site:</u></b>	
<b><u>EnviroPod<sup>®</sup> s Cleaned:</u></b>	
<b><u>Bags Checked:</u></b>	
<b><u>Frames and Seals Checked:</u></b>	
<b><u>Tonnage:</u></b>	

**Comments**

This service has been performed in accordance with EnviroPod Management Plan (EMP) for above site. Please file this receipt with EMP and keep on site for Auckland Regional Council compliance inspections.

<b>Name:</b>	
<b>Signature:</b>	
<b>Position:</b>	



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