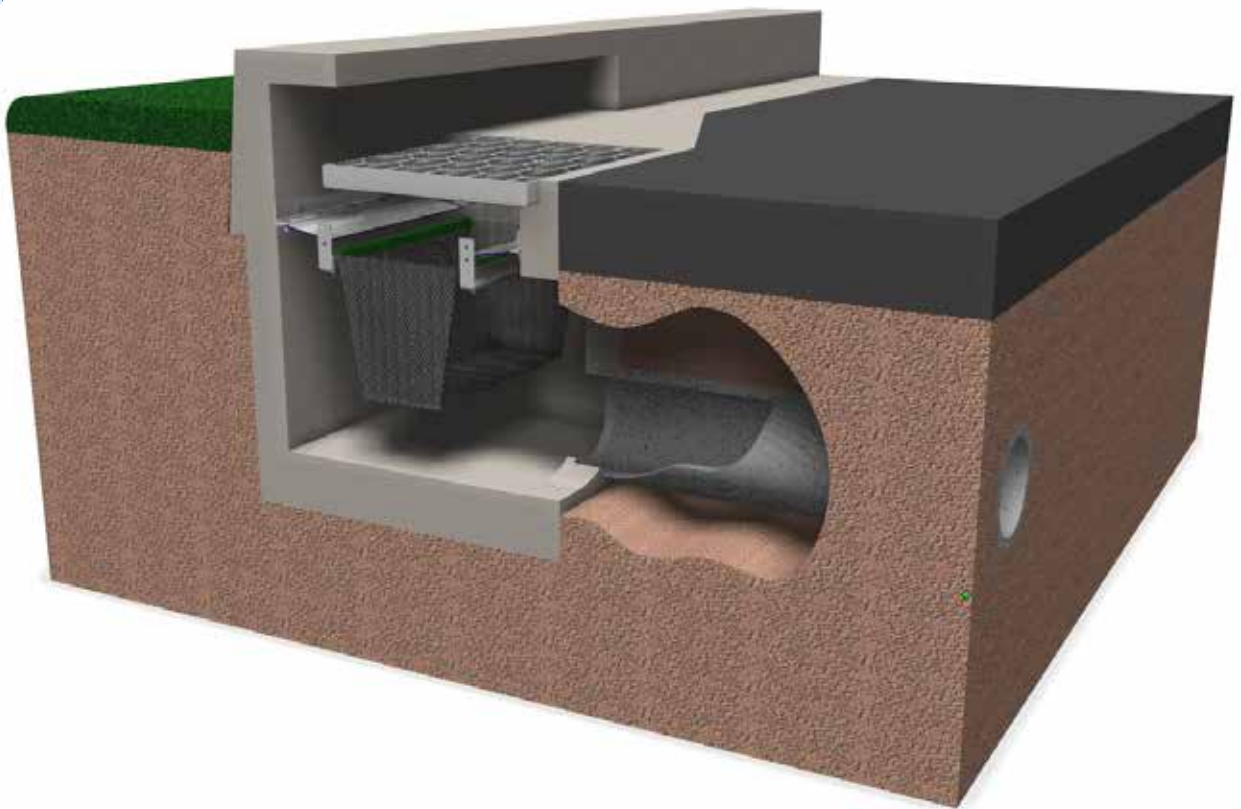


Ecosol™ Litter Basket Maintenance Guide



environmentally engineered
for a better future

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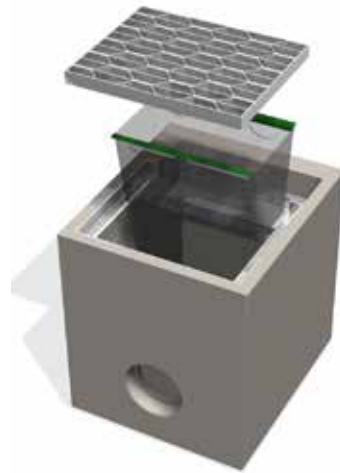
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The Ecosol™ Litter Basket has been designed specifically for easy, safe on site cleaning and maintenance using a licensed waste contractor equipped with a vacuum truck.



1.0 Introduction

The of Ecosol™ Litter Basket (at-source primary treatment solution) is an efficient and cost-effective pre-screening primary treatment system that captures and retains solid pollutants at drainage entry points. It consists of a capture basket and flow plate with ample by-pass capacity for peak rain events. The basket is fitted below the invert of the gutter, inside the drainage pit and importantly does not obstruct flow in the outlet pipe.

2.0 Key Dimensions

The Ecosol™ Litter Basket is able to be custom designed to suit most stormwater entry pits. The below table provides a general guide on typical unit configurations and typical pollutant holding capacities.

Stormwater Inlet Pit Description	Dimensions (Length x Width)		Holding Capacity (typical basket depth 450mm) (m ³)	Treatable Flow Rate (L/s)		By-pass Capacity L/s	Static Head in By-pass mm
	Pit	Litter Basket		200µm mesh	1.5mm mesh		
Drainway	600 x 595	600 x 445	0.120	53	106	110	150
Single Grated Kerb Inlet (with Lintel)	600 x 600	600 x 450	0.121	53	106	110	150
	900 x 750	900 x 450	0.182	83	167	215	150
	900 x 900	900 x 600	0.243	83	167	215	150
Double Grated Kerb Inlet (with Lintel)	1200 x 600	2 x 600 x 450	0.243	103	212	220	150
	1200 x 900	2 x 600 x 600	0.324	103	212	430	150
	1800 x 600	2 x 900 x 450	0.364	106	220	230	150
	1800 x 900	2 x 900 x 600	0.496	106	220	440	150
Single Side Kerb Inlet (with Lintel - no grate)	600 x 660	600 x 450	0.121	53	106	110	150
	900 x 750	900 x 450	0.182	83	167	215	150
	900 x 900	900 x 600	0.243	83	167	215	150
Double Side Kerb Inlet (with Lintel - no grate)	1200 x 600	2 x 600 x 450	0.243	103	212	220	150
	1200 x 900	2 x 600 x 600	0.324	106	220	430	150
	1800 x 600	2 x 900 x 450	0.364	106	220	230	150
	1800 x 900	2 x 900 x 600	0.486	106	220	440	150
Grated Field Inlet (no Kerb or Lintel)	600 x 600	600 x 450	0.121	53	106	110	150
	900 x 750	900 x 450	0.182	83	167	215	150
	900 x 900	900 x 600	0.243	83	167	215	150
Circular Inlet	600	437 x 437	0.085	54	108	120	150
	750	558 x 558	0.140	92	184	172	150
	900	680 x 680	0.208	103	212	225	150
	1050	801 x 801	0.228	103	212	225	150

Table 1 - Ecosol™ Litter Basket Key Dimensions

3.0 Monitoring

Initially Urban Asset Solutions Pty Ltd recommends that monthly monitoring and cleaning is undertaken. Once the unit has been in operation for an extended period of time (eg, 12 months) the monitoring and cleaning schedule can be adjusted to reflect the actual operating conditions specific to the catchment. It is also recommended that the unit is inspected after every major storm event.



4.0 Cleaning And Maintenance Procedures

One of the key advantages of the Ecosol™ Litter Basket is that it can be cleaned by vacuum method using street-sweeping vehicles. This is safe and cost efficient.

Prior to cleaning day



It is important that, prior to commencing a clean, you confirm all plant and equipment is available and operational with service records and pre-start checklists available. It is also recommended that weather conditions for the day of the proposed clean be confirmed as cleaning operations are more efficient when conducted in dry weather conditions. Ensure that you:

- Advise all concerned parties of the proposed date and time that the clean is to take place
- Load all equipment
- Obtain approvals from the appropriate authorities
- Complete a safe work method statement for the work to be undertaken

4.0 Cleaning And Maintenance Procedures Continued

Site Establishment

- Review and amend as necessary and sign off the safe work method statement
- If required, ensure all necessary traffic controls are implemented
- Ensure that the Ecosol™ Litter Baskets to be cleaned are exposed and accessible
- Ensure that barricades are available for all working areas and that signs are in place to prevent injuries to public or staff
- Ensure all working areas are safe and all equipment is in place and ready for operation
- Ensure all plant and equipment is positioned within the area allocated for cleaning and maintenance
- Commence recording cleaning data on the cleaning form provided



Cleaning Steps

- Open and secure the pit access cover or grate
- (Manual method) - lift the internal filtration liner containing the captured pollutants from the pit (lifting handles are attached to the removable filtration liner to avoid contact with the pollutants). Employ safe manual handling practices
- (Vacuum method) - insert the vacuum hose from the vacuum vehicle and remove the pollutants from the filtration liner
- (Manual method) place the captured material into a receptacle and cover it ready for transportation to an approved waste disposal facility
- (Manual method) - prior to reinstalling the liner ensure that no obstructions exist in the bottom of the gully pit. Remove obstructions, if any, and carefully re-install the liner into the support brackets
- Ensure that the by-pass flap(s) is functioning properly and make sure that the liner is firmly fitted and not obstructing the by-pass flap(s)
- Secure the pit access cover or grate and remove all equipment and signage
- Ensure any affected areas are restored to their original condition
- Dispose of all captured pollutants at an approved waste disposal facility



5.0 Reporting

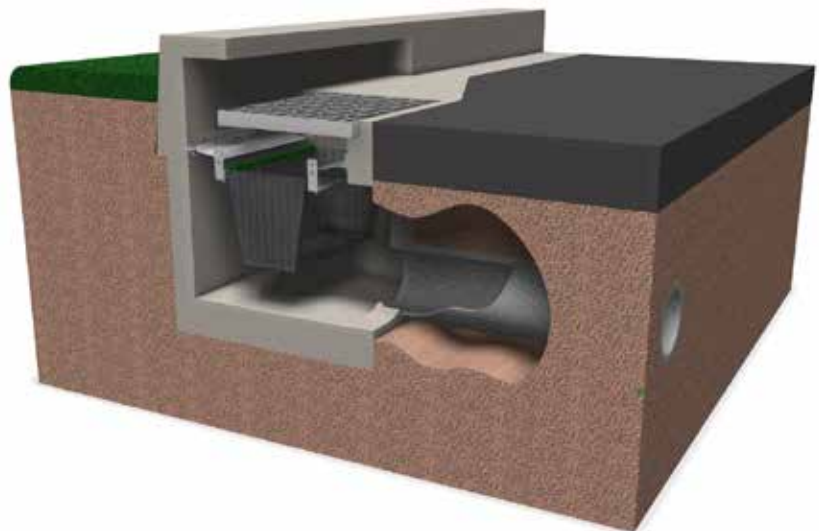
After each clean and inspection it is important that all data is recorded for use in ongoing asset management activities. A cleaning report should be prepared that details as a minimum the following information

- Site location;
- Date and time of the clean;
- Duration of the clean;
- Volume or weight of material removed;
- Composition of the captured material eg. sediment, vegetation and litter; and
- Details of any remedial work undertaken or required at a later stage

Reporting of the above information is included in the cost of any clean undertaken by Urban Asset Solutions Pty Ltd please refer to the next section for more details.

6.0 Monitoring, Cleaning And Maintenance Services

Urban Asset Solutions Pty Ltd has a very competitive cleaning service using an eductor truck for the removal of all captured pollutants. After each clean we provide a full report detailing the volume and type of pollutants removed. We believe that it is in your best interests for Urban Asset Solutions Pty Ltd staff to clean and maintain the unit, not only because we are specialists, but also because proper monitoring and maintenance enhances the unit life significantly.



7.0 Catchment Size And Recommended Cleaning Frequency

The table below provides a broad guideline about the catchment size and number of cleans required annually.

Optimal Catchment Size (Ha)	Recommended cleaning frequency based on optimal catchment sizes and typical pollutant loads (per annum)
	Typical Developed Urban Catchment
Up to 0.2	2
Up to 0.3	2-3
Up to 0.5	3-4

Table 2 - Ecosol™ Litter Basket Cleaning Frequencies

Quoted cleaning frequencies are based on typical gross pollutant loads anticipated for standard commercial, residential and light industrial catchments. Gross pollutants in this instance includes vegetation as well as anthropogenic litter, and sediment. Cleaning frequencies may vary based on local catchment conditions and rainfall however the above theoretical cleaning frequencies are based on a pollutant loading of 0.660m³/ha/year.

8.0 Life Expectancy

The Ecosol™ Litter Basket is designed to meet strict engineering guidelines and manufacturers guarantees. The stainless steel components have a life expectancy of 15 years while the filtration bag has a life expectancy of 5 years providing appropriate maintenance practices are employed.

9.0 Warranty

The Ecosol™ Litter Basket is covered by a twelve month warranty provided the unit is maintained and cleaned with the frequency, and using the method, recommended in this maintenance guide.

10.0 Supplier And Technical Product Contract Details

For any maintenance or technical product enquiries please contact:

Urban Asset Solutions Pty Ltd

Tel: 1300 706 624

Fax: 1300 706 634

Email: info@urbanassetsolutions.com.au

11.0 Ecosol™ Litter Basket Cleaning And Maintenance Inspection Form

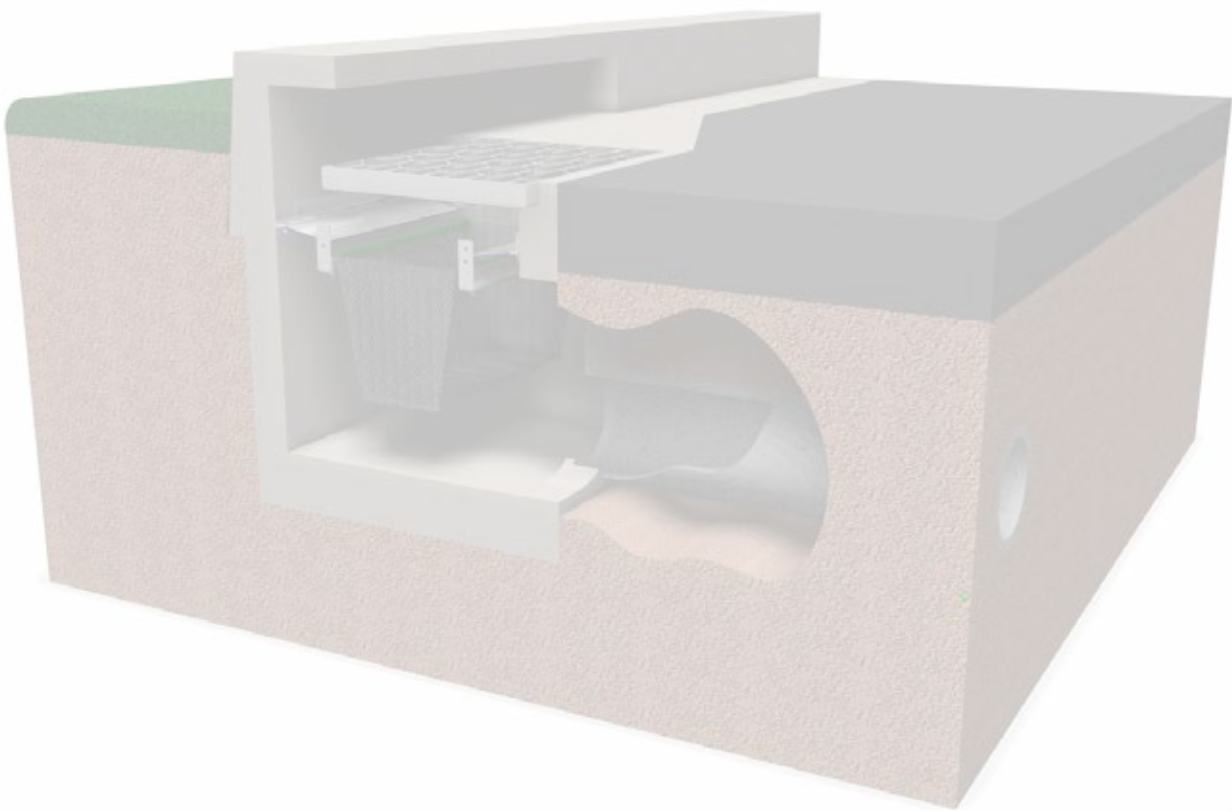
Customer Details

Asset Owner: _____ Asset ID: _____
 Unit Location: _____ UAS Ref: _____
 Date: _____ Time: _____ Product Code: Ecosol™ Litter Basket
 Inspected By: _____

Visual Inspection

SEP No.	Location	Primary Treatment Chamber	Good	Fair	Poor	Comment
		Condition of SEP grate/cover				
		General condition of SEP				
		Condition of filtration basket				
		Condition of flow plate				
		Condition of Litter Basket support frame				
		Percentage of fill		%		
		Volume of material removed		Kg		
		Condition of SEP grate/cover				
		General condition of SEP				
		Condition of filtration basket				
		Condition of flow plate				
		Condition of Litter Basket support frame				
		Percentage of fill		%		
		Volume of material removed		Kg		
		Condition of SEP grate/cover				
		General condition of SEP				
		Condition of filtration basket				
		Condition of flow plate				
		Condition of Litter Basket support frame				
		Percentage of fill		%		
		Volume of material removed		Kg		

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