



Stormwater360

ESK™

Operation & Maintenance Guidelines

DRAFT (for site-specific guidelines email maintenance@stormwater360.co.nz)

INTRODUCTION

This document, and the information within, are provided to be used only as a guide. This document is intended to provide general information for the operation and maintenance of the ESK device ("the product"). This document is not intended to be comprehensive health and safety guidelines for the operation and/or maintenance of the ESK device, which are the responsibility of the owner of the device.

Users of this document are encouraged to consult professional advice before taking any course of action related to information, ideas or opinions expressed in this document.

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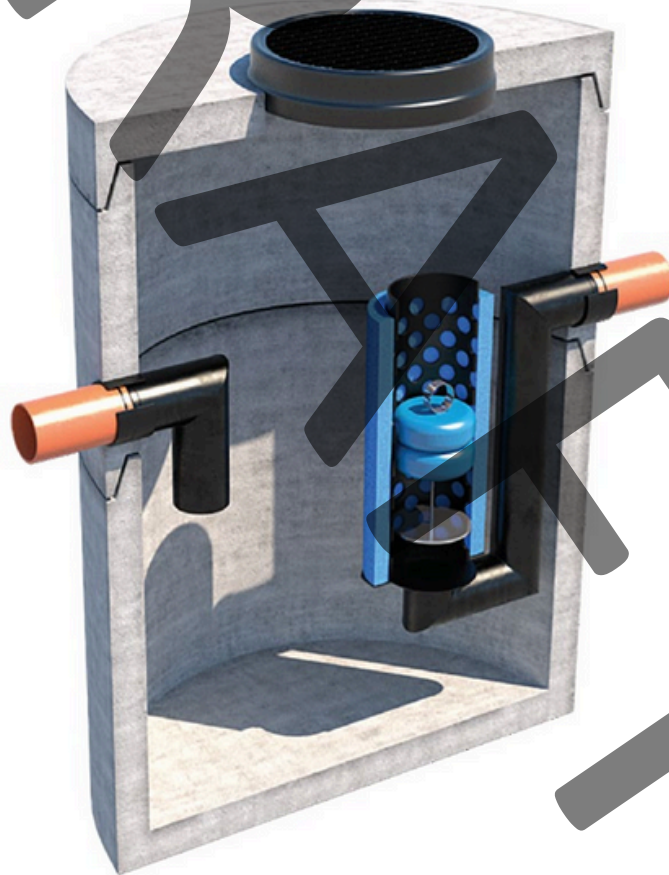


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SECTION A Site Specific Details

This section is to be filled out by the asset owner following installation of ESK devices. For assistance in filling out this form please contact our Maintenance Manager via 0800 STORMWATER. Please return completed forms via email to maintenance@stormwater360.co.nz.

Project Name:

Project Address:

Resource Consent Number:

Building Consent Number:

Consent/Site Owner:

Consent/Site Owner Address:

Table 1; Summary of Installed Devices:

Stormwater360 Reference #	Device Model	Catchment Area (m ²)	Estimated Maintenance Frequency (Months)
			12 Months

SECTION B As Built Drawings

This section is to be filled out by the asset owner following installation of ESK devices. For assistance in filling out this form please contact our Maintenance Manager via 0800 STORMWATER. Please return completed forms via email to maintenance@stormwater360.co.nz.

The following as-built drawings are to be provided to Stormwater360 to include within this section;

As-Built Drawings	Supplied
Site Plan shown location of each ESK Device	YES / NO
Catchment Plan for each ESK	YES / NO
Long-section drawings of site pipe network	YES / NO
Product Drawing (To be supplied by SW360)	YES / NO

SECTION C Operation

ESK™ Coalescence Separators

The Separator consist of a tank equipped with inlet and outlet pipes, a basket with coalescence insert and a closing float valve.

The coalescence insert is made of polyurethane foam with specific parameters, ESK-S and ESK-HS separators include an additional polymer sorbent.

The separator normally equipped with a safety device: a float valve which prevents oil from escaping the separator when the volume inside the tank reaches the designed maximum value.

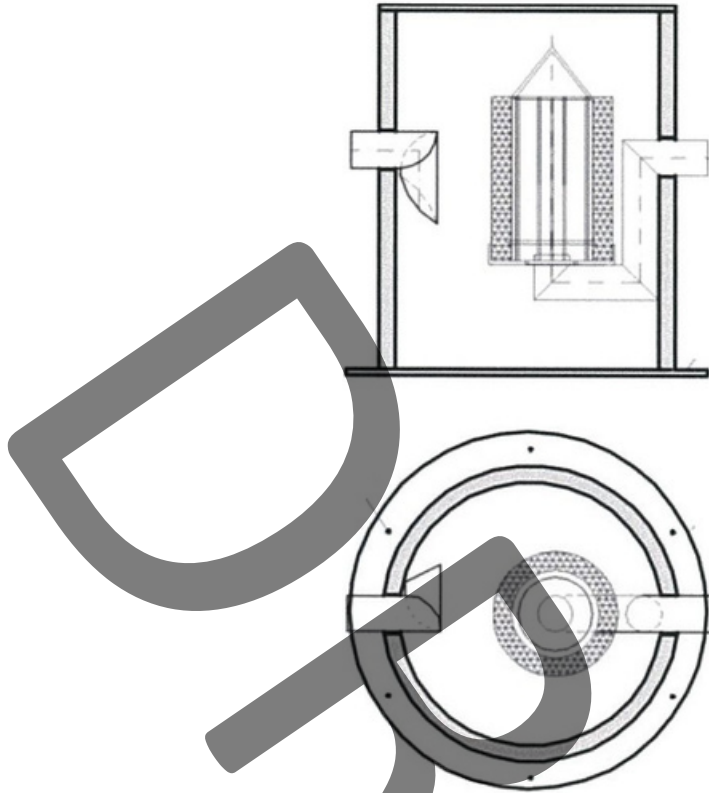
The float is calibrated for density equal to 0.85 g/cm³

The applied solution prevents leakage of oil into the stormwater system.

Assembly

In case of separators delivered as separate elements to be assembled on site:

1. Assemble the precast elements without the lid in accordance with the precast concrete installation instructions.
2. Pump out water from the manhole and thoroughly clean the interior of the tank (if necessary).
3. Assemble the accessory components:
 - a. Place inlet and outlet pipes in their corresponding sockets marked as INLET/OUTLET.
 - b. The inlet and outlet pipes are fixed to the tank wall with concrete anchors.
 - c. Install the float.
4. The access cover should be located directly over the unit to ease maintenance access to the device.
5. After the assembly, lift the float and fill the separator with clean water until water overflows the outlet socket.
6. When the float is not lifted during the filling process, it may be sucked blocking water outflow from the separator.



Device Maintenance

Regular inspection and servicing of the ESK extends their lifespan and ensures their long-term operation. By conducting periodic preventive maintenance of the device, you can minimise the risk of the device failing, ideally an inspection should be carried out every six months.

Device Inspection

Depending on device type, inspections should include the following activities:

1. Visual and physical check of the access cover and method of securing the lid, bolts etc.
2. Inspection of the amount of accumulated suspended solids and/or (depending on the device's intended use) oil film or grease layer thickness.
3. Measurement performance details are described in the following section.
4. Visual check of accessory components: baffles, weirs and internal pipe work.
5. Ensure the access cover is secured once inspection is complete.

Inspection details and device cleaning

Routine inspections (visual check of devices technical condition, amount of oil and suspended solids accumulated in tanks) can be carried out from the ground level, without the need to enter the device.

Inspection of suspended solids layer thickness is done by the use of a measuring staff/probe.

When the suspended solids storage capacity is filled to 1/2 - 2/3 the device should be maintained.

Thickness of oil layer should not exceed values provided in the table below;

Model Type ESK	Permissible thickness of suspended solids layer (mm)	Permissible thickness of oil layer (mm)
10	300	100
20	350	100
40	400	100
100	700	100

Device	Scope of Inspection	Possible Outcome	Recommended Maintenance
ESK	Amount of floatables	High amount of impurities noted	Remove floatables
	Sediment level in the separator	Sediment level exceeds the allowable level	Separator and chamber cleaned
	Oil film depth	Oil film depth exceeds 100mm	Separator and chamber cleaned
	Sorbent check	Impurities noted	Sorbent replacement if material is saturated

When the maximum allowable level of accumulated oil depth is exceeded, the device should undergo the cleaning process.

Depending on device type, cleaning should include the following activities:

1. Removal of large sized floating solid wastes.
2. Pumping out of oils, grease, sludge and sand that has accumulated in the device.
3. Correct disposal of waste materials as per local regulations.
4. Cleaning of the coalescing foam
 - An exploitation key can be used to assist with the removal of the foam insert, contact Stormwater360 to either borrow or purchase the key
 - The following video details its use: <https://www.youtube.com/watch?v=LVuhI9dQysU&feature=youtu.be>
 - Stormwater360 recommend cleaning the foam while still attached to the insert
 - A pressure cleaner is appropriate, but care should be taken not to damage the foam (by using lowest pressure setting)
 - Stormwater360 recommends cleaning the foam twice a year and replacing it every two years, or if a visual inspection deems it deformed or damaged

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The operator of the device, inspection team or maintenance crew should follow all relevant health and safety requirements during the operation, repair and maintenance of the ESK systems and comply with all other associated regulations as required.