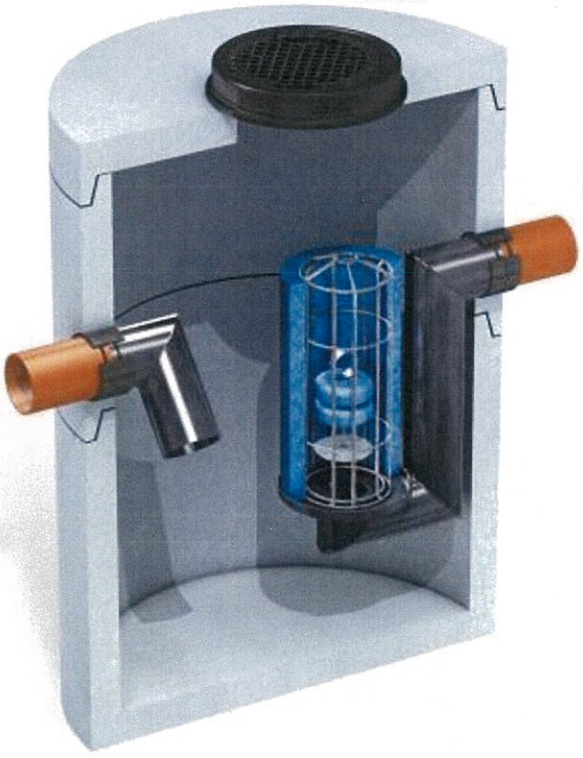
OPERATION AND MAINTENANCE MANUAL

ESK



ESK COALESCENCE SEPARATORS

The Separator consists 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 is 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.

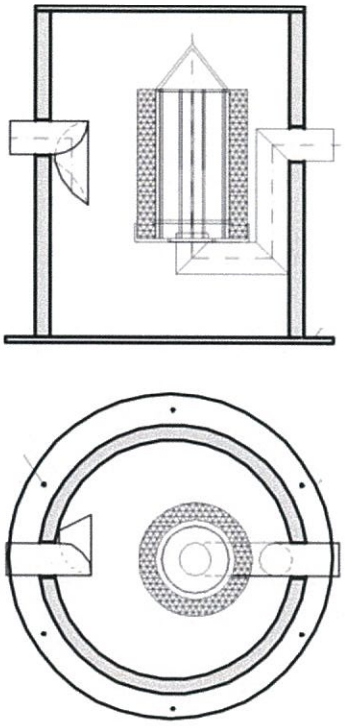
2. Pump out water from the manhole and thoroughly clean the interior of the tank (if necessary).

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, inspection 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 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-H**	Permissible thickness of suspended solids layer [cm]	Permissible thickness of oil layer [cm]
1,5/150	10	10
1,5/300	25	10
3/300	25	10
3/600	25	10
3/2500	40	10
6/600	25	10
6/1200	35	10
6/2500	40	10
6/5000	50	10
10/1000	30	10
10/2000	35	10
10/5000	50	10
15/1500	25	10
15/3000	50	10
20/2000	35	10
20/4000	45	10
30/3000	50	10
30/6000 S	60	10
40/4000	40	10
40/8000 S	60	10
50/5000 S	35	10
50/10000 S	70	10
60/6000 S	45	10
65/6500 S	50	10
70/7000 S	50	10
80/8000 S	60	10
90/9000 S	65	10
100/10000 S	70	10

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.

When the maximum permissible amount of contaminants, as defined in tables, is exceeded, the device should undergo the cleaning process.

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

1. Removal of large-size 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 regulation.

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.