

AAC LF700 - For Site Spillage & Remediation Applications

Introduction

The **AAC LF700** is a modular filter unit designed to control emissions from a wide range of liquid applications i.e. wastewater, groundwater treatment and process liquor purification. Designed for the efficient removal of a wide range of organic compounds the **AAC LF700** is ideal for semi-static operations i.e. emergency and temporary situations such as site remediation and spillage scenarios.

Simple and easy to use the **AAC LF700** has been designed to allow the even distribution of liquid across the carbon filter bed, thus enabling maximum exposure to the filter bed to provide improved efficiency and maximum operational life. As the filter bed is permanently saturated with liquid during operations, the media is always ready for service, even in intermittent use applications. The internal liquid distributor has been configured to enable the **AAC LF700** to be serviced in backwash conditions.



AAC LF700 UNIT

Activated Carbon - AAC LF700

The type of activated carbon used within the **AAC LF700** can be selected depending on the specific function that the filter is required to perform i.e. to provide optimum adsorption capability for a range of contaminants or for the specific removal of individual contaminants such as ozone, chlorine or halogen compounds.

AAC LF700 Modular Filter Units

The modular nature of the **AAC LF700** enables the unit to be arranged in parallel to increase treatment rates or in series to improve removal efficiency. The filter contains 700 litres of activated carbon and at peak volume flow rates of 4.2m³/h an Empty Bed Contact Time (EBCT) of 10 minutes can be achieved.

Technical Details

Adsorption Capacity (mg/g)**	1 mg/l	10mg/l	100mg/l
Styrene	840	3080	11900
Trichloroethylene	105	1330	9800
Toluene	182	511	1470

** based on AAC AS 2002

Parameter	Detail
Height (mm)	1750
Diameter (mm)	1120
Inlet/Outlet	2" BSP Male
Weight (kg clean)	575 kg
Maximum flow (m3/h)	4.2
Minimum flow (m3/h)	0.7
Pressure drop (mbar)*	
@min. flow	5
@1.0 m3/h	20
@max. flow	23

*Based on use of 12x40 USS particle size

Address: AAC Eurovent Ltd, AAC House, Unit K, Maybrook Industrial Estate, Maybrook Road, Brownhills, West Midlands WS8 7DG. UK.

Tel: 08444 77 4884 **Fax:** 08444 77 4797 **International Callers Tel:** +44 (0) 1543 379823

Email: sales@aacurovent.co.uk **Website:** www.aacurovent.co.uk

Preparation Instructions

1. Fill the media to the filter either manually or by hydroreductor, taking care to protect the internal distributors and pipework. Place the media directly into the filter. Please note that the media will 'bridge' if dry filled and the carbon should be distributed manually in this case.
2. When the filter is filled, place the manway lid on top of vessel, sealing with the rubber nitrile gasket and secure with appropriate nuts and washers.
3. Fill vessel with clean water in reverse flow (backwash mode) with manway 1" ball valve open to remove any trapped air, close when liquid appears at this point. Stop the flow and close outlet valve. Re-open the air release valve. Leave vessel to stand for 12-24hrs to de-gas.
4. After 24 hours, the filter is ready for use. Drain the filter and discard the water. Backwash the filter for a double wash cycle or until the wash water clears of entrained particles. Ensure the air release valve is closed prior to starting backwash procedure.

Note: Wet activated carbon depletes oxygen and entry into an enclosed vessel should only be made with an external breathing air supply.

Backwash during commissioning

It is necessary, following de-gassing of the carbon to remove any fines or dust present in the carbon media and to correctly segregate the media. The normal procedure is as follows:

1. Backwash water should be fed to the filter at a maximum rate as indicated in the table below. This rate is relative to the carbon type, granulometry and water temperature used and should be determined from backwash expansion curves available by contacting **AAC Eurovent**. During commissioning, a minimum bed expansion of 20% is recommended in order to correctly clean and segregate the carbon filter bed;
2. Backwash is continued for approximately 30 minutes (2 to 3 times that required during normal operation) or until the effluent is clear of entrained particles and dust;
3. The backwash flow should be reduced gradually over a period of 5-7 minutes.

Backwashing during operation

The differential pressure build-up across the filter bed should be monitored on at least a weekly basis. Excessive pressure build-up can cause damage to

the filter media contained in the filters and restrict the flow of water to the process. In addition, the passing of fines into the process water can cause contamination and damage pumps. The backwashing procedure for each filter is as follows:

1. The inlet water should be stopped and the filter should be allowed to drain off water so that the media bed does not retain excessive amounts of water (the water contained in the filter bed is not present between the backwash inlet and the top of the media bed). The absence of water in the normal outlet is evidence of this.
2. Backwash water should be fed to the filter at a maximum rate as indicated in the technical details. This rate is relative to the carbon type, granulometry and water temperature used and should be determined from backwash expansion curves. During commissioning, a minimum bed expansion of 20% is recommended in order to correctly clean and segregate the carbon filter bed.
3. Backwash is continued for approximately 10 minutes or until the effluent is clear of entrained particles and dust.
4. The backwash flow should be reduced gradually over a period of 5-7 minutes.
5. The inlet supply of water should be applied once more and 2-3 bed volumes of water discarded to drain (rinse step).
6. The filter can now be placed back into service.

Backwashing should only be conducted with fresh water (not recirculated) and all effluent water from the backwashing process should be disposed of to prevent the re-introduction of carbon fines to the bottom of the bed.

Instructions to carry out the decommissioning or preparation for media replacement are contained in a separate bulleting available from **AAC Eurovent** on request.

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