

# Sustainable Modular Filtration Systems



FiltaOdor™ biofilter systems represent the latest technology in deep bed biofiltration.



FiltaOdor™ F0300 with a FiltaVent™ two-way passive filter in foreground installed for Coffs City Council WWPS (Waste Water Pump Station)

## About FiltaOdor™ Technology

FiltaOdor™ biological filter systems use a homogeneous organic micropore filtration media derived from a highly renewable resource. The media has high adsorptive properties for efficient mass transfer of organics and oxygen from inlet gases into the liquid phase. It is long lasting with a high mechanical stability, has low bioavailability and a high surface area to volume ratio. This exceptionally large surface area and rough porous surface permits bacteria adhesion to promote biomass colonisation and distribution. Its porosity prevents pressure loss and maintains constant aerobic conditions throughout the life of the media. The life expectancy of the organic media is greater than 10 years and as a result gives an excellent return on investment.

The environment created by the media enables the highly efficient treatment of odorous gases to reduce the odour profiles of Hydrogen Sulphide ( $H_2S$ ), mercaptans, V.O.C.s (Volatile Organic Compounds), hydrocarbons, ketones, aldehydes, amines and reduce sulphide gases such as Dimethyl Sulphide. Once the system is operational there is minimal maintenance required, provided the supply of the connected utilities of water, power and drainage are stable.

The FiltaOdor™ filter system is available in a number of standard capacities ranging from 75 L/s to 670 L/s and Bioaction is happy to consult on custom requirements. Custom configuration of odour abatement solutions includes design and development of systems to deal with specific capacity and installation requirements as well as more complex odorous gas profiles.

The plug'n'play modular design of Bioaction's FiltaOdor™ filter system provides total flexibility in designing the system to suit the target flow requirements and emission reduction outcomes. The modular design also enables it to be positioned in relatively constrained spaces in comparison to other systems. The modular design is constructed on an engineered skid base to enable rapid installation and commissioning, typically within 1-3 days of delivery to site.

## Benefits of FiltaOdor™ biological odour filters:

- Suitable for municipal and industrial applications
- Capable of removing greater than 95% of  $H_2S$
- Ability to treat complex gas streams
- More than 10 years life expectancy from the unique organic media.
- Deep-bed design with minimal static pressure
- Small operating footprint
- High retention times
- Corrosion resistant and UV stable High Density Polyethylene (H.D.P.E.) construction
- Complete with blower, irrigation, humidification system and electrical control panel
- Skid mounted for rapid deployment and ease of transport
- Minimal installation (air, water, waste and power)

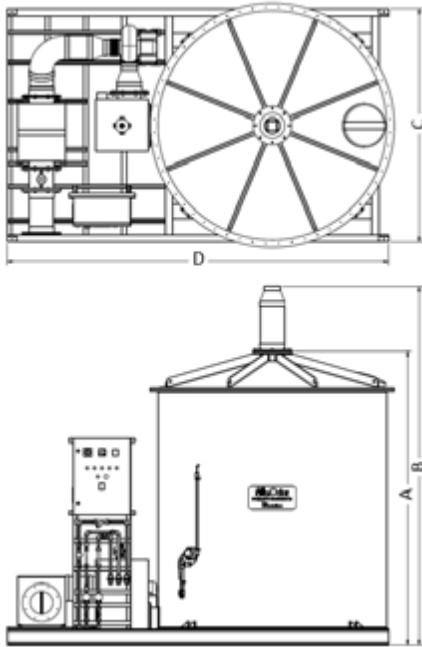


FiltaOdor™ Biofilter installed for Cairns Regional Council WWPS (Waste Water Pump Station)



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<b>Functional Description</b>	The FiltaOdor™ system is a biological treatment system which is capable of removing greater than 95% of odours. A fan on the exhaust side of the vessel creates negative pressure to ensure air flow across the system. Hazardous gases in the incoming air move through a humidification system to raise the relative humidity to > 95%. The gas diffuses through the moist organic media filter bed where the contaminants are biologically oxidised. Moisture within the filter bed is maintained and controlled by an irrigation system. Treated air then flows through a vent stack and out to atmosphere.
<b>Construction</b>	FiltaOdor™ filter vessels are constructed from P300 High Density Polyethylene (H.D.P.E.), incorporating UV-impregnated resins that are corrosion resistant and UV stabilized throughout the material. They have a high chemical-resistance to provide significant design life expectation and are suitable for all climatic conditions. Construction follows DVS technical codes on plastic joining DVS 2202 / 2210. Joint construction is butt and extrusion welded.
<b>Adsorptive Media</b>	FiltaOdor™ uses a unique hydrophobic micropore filtration media with high adsorptive properties for efficient mass transfer of organics and oxygen from inlet gases into the liquid phase. This highly robust media has an exceptionally large surface area for biomass distribution and is sufficiently porous to prevent high pressure loss.
<b>Humidification and Irrigation</b>	A humidification chamber is located prior to the inlet of the filter plenum. Mistng sprayers are located in the chamber to saturate untreated gas to >95% relative humidity. The filter bed is irrigated to maintain correct moisture levels within the filter media to optimise biomass stability and colonisation. The irrigation assembly is located on the filter bed surface and accessed through the inspection hatch.
<b>Optional Items</b>	Standby fan with PLC upgrade. Stainless steel fans. High level systems operational sensors. Irrigation and inspection hatch access platform. Continuous H <sub>2</sub> S monitoring. Activated carbon secondary polisher.

Series	Model	Capacity		Empty Bed Residence Time (EBRT)	Vessel Outside Diameter	Skid Size		System Heights			Media Volume		System Mass					Duct Size	Pressure Drops	Fan Details	
		L / s	m <sup>3</sup> / hr.			Biofilter (m)	Width C (m)	Length D (m)	Biofilter Vessel A (m)	Misc. (Skid, Duct etc.)	Total B (m)	Bio Filter (m <sup>3</sup> )	Biofilter (m)	Biofilter Media (kg)	Vessel (kg)	Skid (kg)	Misc. (kg)			Total (kg)	(mm) ID
FiltaOdor™	FO75	75	270	30	1.2	1.8	3.0	2.86	0.66	3.52	2.25	2	788	133	170	100	1191	104	600	Seat 15	0.37
	FO165	165	594	30	1.8	1.8	3.0	2.94	0.66	3.60	4.95	2	1733	228	300	105	2366	154	600	Seat 20	1.10
	FO300	300	1080	30	2.4	2.4	4.0	3.00	0.66	3.66	9.00	2	3150	337	420	120	4027	240	600	Seat 20	1.10
	FO450	450	1620	30	3.0	3.0	4.5	3.08	0.66	3.74	13.50	2	4725	449	576	150	5900	300	600	Seat 25	2.20
	FO670	670	2412	30	3.6	3.6	4.8	3.16	0.66	3.82	20.10	2	7035	589	690	200	8514	375	600	Seat 25	2.20



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