



WATER



GAS



ENVIRONMENT



PEST CONTROL

BIOCEPTOR

BioCeptor Verified Highly Effective in Independent Testing & Field Trials

Through the combination of two proven technologies, Mechline's **BioCeptor** has been optimally designed to maximise the retention and management of Fats, Oils and Grease (FOG) in the commercial kitchen – and has been verified as highly effective in independent testing and field trials!

Mechline Developments, specialist UK manufacturer of equipment for the Food Service and Hospitality industry, has unveiled its first combined technology approach to drain maintenance – **BioCeptor**. Combining two proven technologies, **BioCeptor** has been optimally designed to maximise the retention and management of Fats, Oils and Grease (FOG) in the commercial kitchen. Utilizing GreasePak's proven biological treatment solution in conjunction with a new interception and retention chamber, Mechline has made it even easier for food service outlets to meet best practise advice, which advocates a combination of techniques to maximise the removal and treatment of FOG.

British Water recommends the use of “more than one equipment system [to] increase the potential to prevent FOG entering the kitchen drains and sewer through separation and



“Using more than one equipment system [...] will increase the potential to prevent FOG entering the kitchen drains and sewer through separation and treatment.”

British Water, FOG Code of Practice

treatment” and suggests configurations that involve biological dosing systems alongside grease separators (FOG Code of Practise). **BioCeptor** has been designed to utilize the traditional principles of entrapment and retention, alongside the natural process of bioremediation to create a highly effective, all-in-one solution, perfect for permanent degradation of FOG.

The first component of **BioCeptor** is the FOG, Intercept and Treatment (F.I.T) unit, which slows down the flow of wastewater

discharged from a food service operation and intercepts FOG through the design of internal baffles. The second is the GreasePak bio-fluid dosing module, which doses highly effective Multi-Strain Grease Degradator (MSGD) fluid into the F.I.T unit. This specialist MSGD fluid is naturally occurring, non-pathogenic and contains in excess of 500 million bacteria per gram; chosen for their FOG degrading capabilities. Held within the F.I.T unit this bacteria forms into biofilms and has ample contact time to breakdown the captured FOG.

Independent Certification

The **BioCeptor's** F.I.T unit has been thoroughly tested and certified as ASME A112.14.3 compliant by independent testing house NSF International, which means that it is highly efficient at capturing FOG.

Prior to ASME verification Mechline set up its own testing facility at its headquarters in order to replicate the ASME test, with the intention of creating the worst possible scenario for a commercial kitchen. Lard was melted in tanks of hot water and drained through the F.I.T unit and into a skimmer tank. The escaped lard was removed and weighed in order to establish the rate of efficiency – and the whole process repeated.

The official ASME test determined that **BioCeptor's** F.I.T unit is highly efficient at capturing FOG, with an average efficiency rating of 95.6%. Nearly all of the FOG to pass through **BioCeptor's** F.I.T unit was retained successfully in its chamber.

Kristian Roberts, Marketing Manager at Mechline comments: *“Interceptors with a flow rate of 25 gpm [like BioCeptor] are required to have a minimum average grease removal efficiency of 90% in order to gain certification, with an average efficiency of 95.6% **BioCeptor** performs well above what is required!”*

Field Trials

BioCeptor has also been rigorously tested in the field, in a variety of kitchens in and around Milton Keynes, under the pressure of real kitchen demands. Trial sites have included a staff canteen at a large, well-known, soft drinks manufacturing plant, a popular fast-food chain and a busy gastropub. One particular test site – the gastropub – had previously suffered external drain issues, as a result of FOG blockages, and unhappy staff, after the installation of a grease removal unit which required daily maintenance. Both complaints have since been silenced with the installation of **BioCeptor**.

Kristian Roberts, Marketing Manager at Mechline, reports: *“Most of all the kitchen staff have been pleased with the lack of putrid odour coming from the chamber, which was o-so familiar with their prior grease trap system. Others have commented on how little they need to clean it out. This is great to hear, as we are always looking to solve problems found in the*



Lard melting in sink bowls before draining, at Mechline's testing facility.



Grease in Mechline's skimmer tank waiting to be collected and weighed.

“Most of all the kitchen staff have been pleased with the lack of putrid odour coming from the chamber, which was o-so familiar with their prior grease trap systems. Others have commented on how little they need to clean it out. This is great to hear, as we are always looking to solve problems found in the commercial kitchen – and people's time is a big one!”

Kristian Roberts, Marketing Manager at Mechline

commercial kitchen – and people's time is a big one!”

The gastropub trialled **BioCeptor** in two parts. First the F.I.T unit was installed in isolation in order to verify its ability to retain FOG in a working kitchen. Secondly, the biological treatment solution was added, to determine its effectiveness in breaking down the captured FOG and the overall advantages of this combined technology approach.

Phase 1: The F.I.T unit was installed at the gastropub in isolation, without bio-dosing.



28 July 2017 - F.I.T unit connected to waste pipe of a double bowl pot sink and single rack dishwasher machine. No bio-dosing at this stage in trial.



9 August 2017 - 12 days in. Floating organics around 100mm deep from surface.



17 August 2017 - 20 days in. Floating organic around 150mm from surface.



25 August 2017 - 28 days in. Floating organics had become saturated and sunk, leaving around 10mm of floating oil. The unit was completely full – 40 litres of organic material and 10 litres of oily water were removed.

Phase 2: The F.I.T unit was cleaned out and GreasePak connected. Trial continued as BioCeptor...



5 September 2017 - 11 days with bio-dosing. No floating organics. Small amount of sediment in bottom of F.I.T unit (by-product of FOG degradation).



21 September 2017 - 27 days with bio-dosing. More sediment in bottom of F.I.T unit, but barely noticeable.



6 October 2017 - 32 days with bio-dosing. Floating organics, but only a few mm thick.



15 November 2017 - 2 days short of 12 weeks. 5 litres of floating organic material, 5 litres of sunken food/organic waste debris and 40 litres of oil and water were removed. End of trial.

Without the presence of GreasePak's Biological Dosing Unit, BioCeptor's F.I.T unit was full of FOG after just 28 days - the unit had been extremely efficient in capturing FOG and preventing it from proceeding down the drain! With the addition of GreasePak's MSGD fluid, after the same time period (27 days), there was no thick layer of FOG to speak of. It took twelve weeks – nearly 3 times the amount of time – for the **BioCeptor** unit to require emptying. The MSGD fluid had been highly effective at breaking down the FOG.

BioCeptor's dosing component, GreasePak, is the only BBA (British Board of Agrément) approved bioremediation dosing system on the market (certificate 11/4827) and its MSGD fluid is the most powerful. With this, together with the F.I.T unit, **BioCeptor** not only prevents FOG from reaching the drains, but also reduces the frequency of regular service/cleaning needed.

This in turn lessens the need to open the F.I.T unit and reduces the associated hygiene risks.

Although, when the time does come, **BioCeptor** has been designed with easy cleaning in mind. Its rounded, modern design means there are no corners or crevices where organic waste can collect and its easy to remove baffles and lightweight nature facilitate easy cleaning and maintenance for a licensed contractor. Furthermore, the F.I.T unit's airtight chamber is sealed to prevent odours from escaping.

With the tried and tested airtight F.I.T unit combined with the already proven and highly accredited GreasePak MSGD fluid, **BioCeptor** is a force to be reckoned with. Fatbergs be warned...

For more information on products from Mechline Developments Ltd, contact us on:

+44 (0) 1908 261511 | info@mechline.com | www.mechline.com