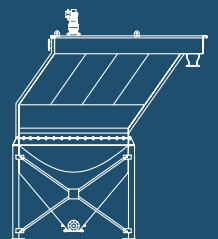
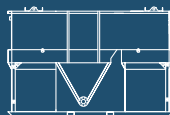




Treatment Solutions for the Distilled Spirits Industry



Hire, Sales & Technical Support

Dissolved Air Flotation

Overview - Dissolved Air Flotation

With installations at several Scotch Whisky distilleries, SPS has demonstrated the simple, reliable and cost-effective treatment of mixed distillery effluent, including spent lees. Reduction of influent Suspended Solids, Copper and BOD loading onto existing biological treatment processes can easily be achieved by integrating one of our range of Dissolved Air Flotation (DAF) units.

Once installed, DAF technology can be retained as an integral part of future plant upgrades or can be specified as part of new build biological treatment facilities, as recently demonstrated at a number of Scotch distillery sites.



MAIN ADVANTAGES

- + Simplified treatment of influent solids, BOD and copper loadings
- + Large hydraulic treatment capacity in relation to footprint
- + Process stability with fluctuating loads
- + Rapidly deployable plug and play solution with all connections at ground level

How it works

Using proven solids/liquid separation technology, the DAF units create 'white-water' by dissolving air under pressure and then releasing it to form micro fine air bubbles.

This 'white-water' is combined with the influent, which is normally subjected to chemical pre-treatment in the first stage of the process, to enable the solids to agglomerate in the form of 'flocs'. The fine air bubbles attach themselves to the solids, which rise to the surface, with the lamella plates providing a large hydraulic separation area. The solids naturally dewater and thicken once on the surface, and are removed by means of a mechanical scraper.

A small portion of the treated water is then recirculated back round the process to generate further 'white water' for the treatment process.

Helius CoRDe Ltd

Roths

A key requirement in the development of this new £60M facility was to enhance the treatment capacity and capability of the existing effluent treatment plant, in order to safeguard licence compliance for discharge to the iconic River Spey.



Clwyd Jones of SPS comments 'The CoRDe facility is quite unique in that it provides full biological treatment of effluent from so many distilleries. This project again serves as an excellent example of our philosophy of utilising DAF technology to enhance the treatment capacity of existing assets.' Here SPS supplied its largest DAF unit, a D100, capable of treating up to 100 m³/hr of influent mixed with surplus biological sludge from the high-rate biotowers.

Frank Burns, Managing Director of Helius CoRDe Ltd said, "The technical solution offered by SPS provided the additional capacity and capability required within the footprint of our existing plant. Installation and commissioning was delivered without interrupting our concurrent construction or processing activities."

Biological Treatment Solutions

Overview - MBBR Technology

Siltbuster's Moving Bed Biofilm Reactor technology (MBBR) can be supplied either as a 'bespoke' permanent installation or as Biobuster packaged unit, available in a range of capacities as 'plug and play' solution.

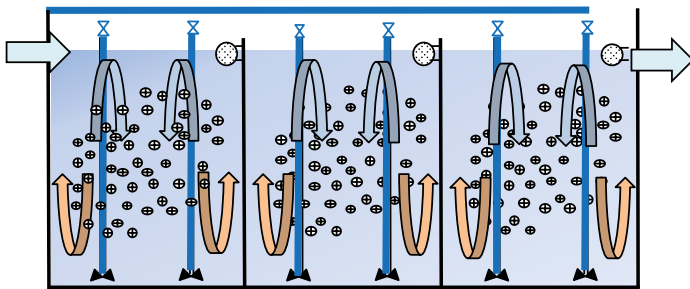
Based on established fixed film biological treatment all our MBBR systems use floating plastic media with a specific area of up to 1000m²/m³. This allows a much higher concentration of active biomass to be maintained in the reactor for biological treatment without increasing the reactor size. The result is more treatment capacity within a given volume, resulting in a smaller footprint.

The MBBR process is also much more efficient when compared to biotowers and trickling filters, especially during cold weather.



MAIN ADVANTAGES

- + Increased treatment capacity compared to conventional treatment technologies
- + Process stability with fluctuating loads, up to 99% BOD removal if using 2 or more stages
- + Rapidly deployable plug and play options for smaller distilleries
- + Part of a packaged system when combined with other Siltbuster treatment solutions



How it works

The MBBR process uses a plastic carrier media with a large specific surface area, which provides sites for active bacteria attachment in a completely mixed suspended growth medium. Movement of the media allows for the regulation of biomass, thus avoiding the need for scour cycles.

Our packaged Biobuster unit is configured with three compartments. BOD removal occurs in the first two chambers prior to ammonia removal in the third (if nitrification is required). An aeration system comprising multiple diffusers within each compartment provides even air distribution for mixing energy whilst also maximising the oxygen transfer efficiency.

The MBBR has a blower skid to deliver air flow through a common manifold, with all connections at ground level. The air flow rate is monitored by a dissolved oxygen meter for optimisation of biological treatment whilst minimising energy consumption. Clarification of the biological solids is normally achieved by DAF flotation or by lamella settlement.

Chivas Brothers

Glen Keith Distillery

Chivas Brothers' recent major investment in the expansion and refurbishment of its Glen Keith Distillery included the installation of a new wastewater treatment plant. This was based on the Siltbuster DAF plus MBBR biological treatment process to treat the combined mixed distillery effluent from Glen Keith and the nearby Strathisla Distillery before discharge to sewer.

The 'partnership' approach to the project enabled Chivas Brothers to concentrate on those aspects it could deliver itself, along with its trusted sub-contractors, with SPS being responsible for Process Design, supply, installation and commissioning of the treatment process stages. Clwyd Jones of SPS comments "We are very pleased to have again worked with Chivas Brothers delivering a cost-effective treatment solution".

The >90% COD removals achieved by the single stage MBBR process has exceeded expectations, and this reference site serves to demonstrate that the MBBR process, in combination with tried and tested DAF technology, has a major role to play in enabling other distilleries to achieve their effluent treatment compliance objectives.





Hire, Sales & Technical Support

Tel: +44(0)1600 772256

Visit: www.siltbuster.com

Email: enquire@siltbuster.com

Siltbuster Process Solutions Ltd, Unipure House, Wonastow Road, Monmouth, Monmouthshire, NP25 5JA

©2014 Siltbuster Process Solutions Ltd. All pricing and references to operating weights, sizes, capacities and other performance measurements in this publication are provided for guidance only and may vary dependant upon site specific parameters and exact product specification. Illustrations and specifications shown may include optional equipment not included as standard. Guidance on correct applications should always be sought from your Regional Sales Representative.
Siltbuster Process Solutions Ltd reserves the right to change pricing and specifications without notice.