



DISSOLVED AIR FLOTATION

Chemical Treatment & DAF for Water & Wastewater Treatment



Aquabio Limited, Worcester, U.K.

Tel: +44 (0) 1905 641966 Fax: +44 (0) 1905 641977

Email: info@aquabio.co.uk Web: www.aquabio.co.uk



DAF NEWS

Aquabio installs DAF technology for UK Tannery wastewater Pre-treatment



Aquabio has supplied and commissioned a new 100m³/hr Dissolved Air Flotation system for Pittards tannery in Leeds. The system replaces an existing antiquated unit and upgrades treatment of wastewater which has already passes through the sulphide oxidation and flow balancing stages.

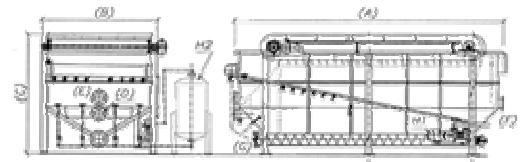
The chemically treated effluent enters a flotation chamber for the RPF in-line pipe flocculator, where micro-bubbles of air adhere to the solid particles and decrease their apparent density so that they float to the liquor surface for removal by rotating mechanical scrapers. The microbubbles are created by dissolving air under pressure (>5 bar) into a portion of treated, recycled effluent. The supersaturated recycle stream is reintroduced to the low pressure incoming wastewater at the flotation tank inlet using special injection nozzles. After pressure release the resulting microbubbles (40-50 microns) rise slowly through the body of mixed liquor, attaching themselves to the 'flocs' and suspended solids. The heavier rapidly settling solids fall to the hopper base for collection and the treated (clarified) wastewater flows under a baffle and over a weir outlet for discharge and/or, further treatment.

The DAF systems which differ from 'conventional' systems by achieving very high effective surface loading rates. On high rate models this is enabled by a laminar tilted plate device contained within the flotation section which ensures that the Effective Surface Area for settlement is retained, in a very low 'footprint' and without risk of clogging.



ADVANTAGES

- Significantly reduced 'footprint' compared with other conventional DAF other 'open bed' flotation processes
- Modular package plant design to customer requirements
- Easily accessible and low maintenance
- No backflushing
- Inexpensive installation compared with other conventional separation processes
- Reliable performance
- Choice of chemical pre-treatment techniques - Serpentine coil or reaction chambers
- Bench and pilot tests available
- Ideal for 'stop/start' treatment
- Low level sludge hopper ensures rapidly settleable solids are efficiently handled.
- The chemical treatment and pressurised recycled system design to suit client requirements.
- Robust construction with a choice of bespoke materials for corrosion resistance (flotation chambers in 304/316 Stainless steel)
- Units can be skid mounted and pre-tested before delivery to site.
- Multiple units can be operated in series or parallel
- Proven process worldwide



For further information about this, and other, DAF systems and other products and processes, please contact us at Aquabio Limited, Worcester, UK, either by e-mail or fax.

Tel : +44 (0) 1905 641966
e-mail : info@aquabio.co.uk

Fax : +44 (0) 1905 641977
Web : www.aquabio.co.uk



DAF NEWS

Aquabio installs DAF technology as pre-treatment for another AMBR Plant in the Food and Drinks Industry



Aquabio has installed a new 12m³/hr chemical treatment and Dissolved Air Flotation (DAF) system for pre-treatment to the membrane bioreactor at another UK food and drinks processor. Aquabio also installed the new secondary treatment plant (based on AMBR membrane bioreactor technology) as part of the same project.

Screened and flow balanced wastewater is transferred from the existing system and into the chemical treatment stage prior to the DAF. Chemical treatment is carried out in a 'conventional' two step flocculation and pH control stage, before entering the high rate flotation chamber. Here micro-bubbles of air adhere to the solid particles and decrease their

apparent density so that they float to the liquor surface for removal by rotating mechanical scrapers. The microbubbles are created by dissolving air under pressure (>5 bar) into a portion of treated, recycled effluent. The supersaturated recycle stream is reintroduced to the low pressure incoming wastewater at the flotation tank inlet using special injection nozzles. After pressure release the resulting microbubbles (40-50 microns) rise slowly through the body of mixed liquor, attaching themselves to the 'flocs' and suspended solids. The heavier rapidly settling solids fall to the hopper base for collection and the treated (clarified) wastewater flows under a baffle and over a weir outlet for discharge and/or, further treatment.

The DAF units differ from 'conventional' systems by achieving very high effective surface loading rates. This is enabled by the special laminar tilted plate device contained within the flotation section which ensures that the Effective Surface Area for settlement is retained, in a very low 'footprint' and without risk of clogging.



ADVANTAGES

- Significantly reduced 'footprint' compared with other conventional 'open bed' DAF units.
- Modular package plant design to customer requirements.
- Easily accessible and low maintenance.
- No backflushing.
- Inexpensive installation compared with other conventional separation processes.
- Reliable performance.
- Choice of chemical pre-treatment techniques - Serpentine coil or reaction chambers.
- Bench and pilot tests available.
- Ideal for 'stop/start' treatment.
- Low level sludge hopper ensures rapidly settleable solids are efficiently handled.
- The chemical treatment and pressurised recycled system.
- Robust construction with a choice of bespoke materials for corrosion resistance.
- Units can be skid mounted and pre-tested before delivery to site.
- Multiple units can be operated in series or parallel.
- Proven process worldwide.



For further information about this, and other, DAF systems and other products and processes, please contact us at Aquabio Limited, Worcester, UK, either by e-mail or fax.

Tel : +44 (0) 1905 641966
e-mail : info@aquabio.co.uk

Fax : +44 (0) 1905 641977
Web : www.aquabio.co.uk



DAF NEWS

Aquabio installs KCL DAF technology as pre-treatment for Dairy AMBR Plant



Aquabio has supplied and commissioned a new 104m³/hr high rate KCL Dissolved Air Flotation system for pre-treatment to the biological secondary plant at a UK dairy. The system replaces two rental units which had been installed temporarily to deal with overloading problems. Aquabio also installed two new 800m³ aerated balancing tanks prior to the DAF stage, bulk chemical storage and dosing systems and AMBR crossflow biomass separation.

From the balancing tanks the incoming wastewater is chemically treated in an RPF pipe flocculator before entering the high rate flotation chamber. Here micro-bubbles of air adhere to the solid particles and decrease their apparent density

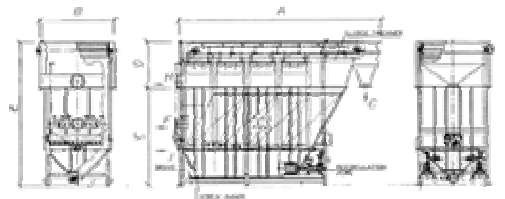
so that they float to the liquor surface for removal by rotating mechanical scrapers. The microbubbles are created by dissolving air under pressure (>5 bar) into a portion of treated, recycled effluent. The supersaturated recycle stream is reintroduced to the low pressure incoming wastewater at the flotation tank inlet using special injection nozzles. After pressure release the resulting microbubbles (40-50 microns) rise slowly through the body of mixed liquor, attaching themselves to the 'flocs' and suspended solids. The heavier rapidly settling solids fall to the hopper base for collection and the treated (clarified) wastewater flows under a baffle and over a weir outlet for discharge and/or, further treatment.

The DAF systems differ from 'conventional' systems by achieving very high effective surface loading rates. This is enabled by the special laminar tilted plate device contained within the flotation section which ensures that the Effective Surface Area for settlement is retained, in a very low 'footprint' and without risk of clogging.



ADVANTAGES

- Significantly reduced 'footprint' compared with other conventional 'open bed' DAF units.
- Modular package plant design to customer requirements.
- Easily accessible and low maintenance.
 - pH Control & Flocculation
- No backflushing.
- Inexpensive installation compared with other conventional separation processes.
- Reliable performance.
- Choice of chemical pre-treatment techniques - Serpentine coil or reaction chambers.
- Bench and pilot tests available.
- Ideal for 'stop/start' treatment.
- Low level sludge hopper ensures rapidly settleable solids are efficiently handled.
- The chemical treatment and pressurised recycled system.
- Robust construction with a choice of bespoke materials for corrosion resistance.
- Units can be skid mounted and pre-tested before delivery to site.
- Multiple units can be operated in series or parallel.
- Proven process worldwide.



For further information about this, and other, DAF systems and other products and processes, please contact us at Aquabio Limited, Worcester, UK, either by e-mail or fax.

Tel : +44 (0) 1905 641966
e-mail : info@aquabio.co.uk

Fax : +44 (0) 1905 641977
Web : www.aquabio.co.uk