

Enhanced Dissolved Air Floatation (DAF)

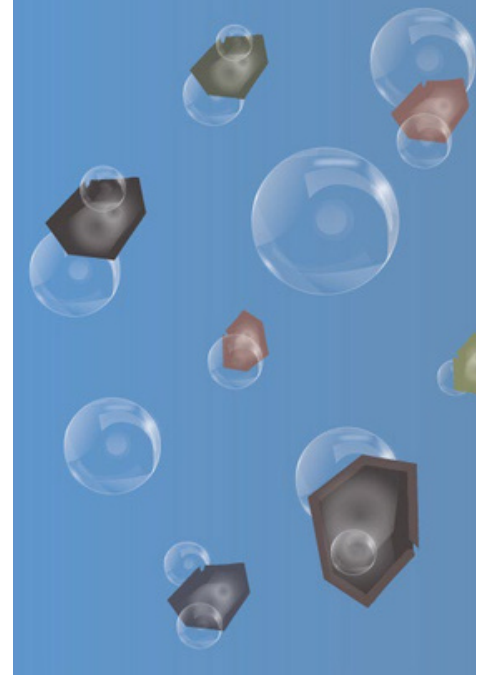


Working Principle

Dissolved Air Flotation (DAF) works on the principle of physio-chemical technique for treating a variety of industrial processes and wastewater streams, including those from sewage, food processors, laundry facilities, pulp and paper producers, as well as other biological wastewater treatment systems. Our DAF systems effectively removes suspended solids (TSS), Oil & Greases and reduces COD, BOD and Turbidity from any wastewater stream.

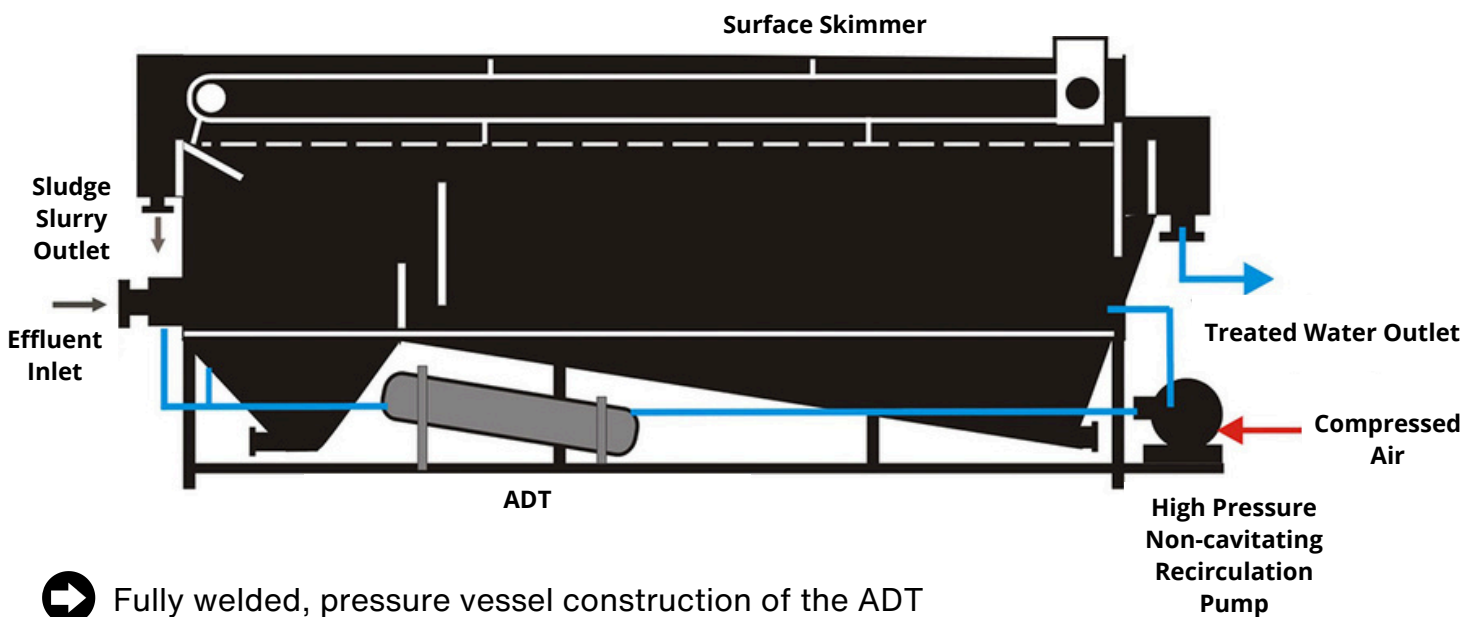
Boson Alchemies DAF systems are enhanced with specially designed and proprietary self integrated and on-skid mounted Air Dissolving Tank (ADT). We use air dispersion and diffusion forces as principles to generate microbubbles with very high saturation. The clarified effluent stream after the DAF is used to mixed with influent stream in a hermetically sealed high pressure ADT from where the dissolved micro bubbles come out and get attached to the contaminant particles.

These bubbles causes the sludge particle / contaminants to rise to the surface of the effluent water and forms a continuous layer of sludge, which is skimmed off by a scrapper into a separate sludge slurry chamber of the DAF. This sludge can be further taken to a filter press or a dewatering screw for further treatment.



Micro bubbles attach to the sludge particles and float; Rising up to the liquid surface

Schematic



- ➡ Fully welded, pressure vessel construction of the ADT
- ➡ Custom designed as per site space constraints
- ➡ Inbuilt or Separate flocculation chamber or tube flocculator integrated with DAF

Features

- ✓ Extremely Compact Design with least footprint
- ✓ High efficiency air dissolving ADT with least power consumption
- ✓ Concurrent scrapper for longer float residence time, results in driest sludge
- ✓ Can be made in PP, FRP, CS or SS304
- ✓ High efficiency air-in-water pump provides high concentration of air bubbles
- ✓ Fully Skid mounted Unit

Applications

DAF systems are commonly used for the removal of oils & greases, fine metals and suspended solids to meet a variety of treatment goals including

- Product recovery and reuse
- Post Hydro-oxidation for continuous processing and separation of suspended solids from oxidation process
- DAF is also used as a self integrated domestic Sewage Treatment Plant with Boson Alchemiesformulated special M-23CF chemical with as a continuous process for any flow rates upwards of 1 m³/hr
- Pretreatment and separation to reduce loading on downstream processing and filtration systems
- Thickening of sludge solids

- ➡ Food and Beverage Industries (Bakery / Baked goods, Cereal, Snack foods, Breweries, Juice, Soda etc)
- ➡ Poultry & Meat Processing Industry
- ➡ Confectionary and Candy making
- ➡ Domestic Sewage Treatment (STP) plants with capacities exceeding 200 KLD
- ➡ Fractionated Water Treatment
- ➡ Produced Water Treatment
- ➡ Heavy Metals processing plant for removal separation
- ➡ Edible Oil & Fat processing refineries
- ➡ Industrial & Cloud Kitchens

Capacity & Models

Boson AlchemiesEnhanced DAF systems are manufactured in different capacities ranging from as small as **1 m³/hr up to 200 m³/hr** and are made custom designed in any Thermoplastic Composite, MSEP or SS304EP (also SS316 as an option). Our DAF systems are fully integrated with Tanks, Pumps, ADT module and Micro-controller programmed Control Panel box.

Talk to us about your application and we will be happy to offer you a solution.

About Us

Boson Alchemias as the name implicates- technologies and advancements of the future. We are ex-industry stalwarts with the purpose and vision of bringing specialized knowledge, value added products, services and solutions to you which will help your businesses grow and be profitable & sustainable.

Many of our process technologies are a result of Innovation, Process Development, Research and Strategic Technology Tie-ups with International Companies with R&D facilities having core expertise in the subject field. We have associations with many industry leading solutions and service providers to provide and end-to-end and seamless delivery for your needs.

Why Us

Having already supported over 120+ customers long term, we specialize in what we do. All our core capabilities, products and solutions are backed by our own knowledge and are developed inhouse and hence we are not dependent on any vendor or service provider to commit and deliver.

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