

Flotation Technologies

Waterex has designed, engineered, supplied and serviced Flotation Plants for over 40 years. This experience on three continents along with Waterex's continuous investment in research and development has resulted in several significant improvements in ultra-fine bubble flotation plant design.

Waterex has experience supplying the following flotation technologies:

- Dissolved Air Flotation
- Dissolved Gas Flotation
- Micro Bubble Flotation

Applications

Include but are not limited to:

- Oil/organic strip
- Pulp and paper effluents
- Dyes and colouring agents
- Industrial effluent polishing
- Bio effluents
- Food industry effluent treatment
- Water treatment ultra fine flocs/slimes
- Eutrophic bio-growth stripping
- Ultra fine metallurgical slimes
- Hydrometallurgical precipitates

Dissolved Air Flotation

Dissolved Air Flotation is a water treatment process that clarifies wastewater by the removal of suspended solids such as oil or solids. This removal is achieved by dissolving air into the water under pressure and then releasing the air in a flotation tank. The released air forms bubbles less than 80 microns in size which adhere to the suspended solids causing them to float to the surface of the water where they may then be removed by a skimmer.

Water that is particularly vulnerable to unicellular algal blooms and supplies with low turbidity and high colour often use Dissolved Air Flotation.



Dissolved Gas Flotation

Dissolved Gas Flotation is a similar technology to Dissolved Air Flotation with the exception that natural gas is used in place of air on oil or gas installations to efficiently strip oil in an intrinsically safe manner, to zone 2 gas group IIA compliance or better.

Micro Bubble Flotation Plants

Micro Bubble Flotation removes oil from water more efficiently and effectively than the previous two technologies. Unlike Dissolved Air flotation systems that rely on solubility and technology that uses large bobbles, Micro Bubble Flotation uses bubbles 5 to 40 microns in size. Because of the increased surface area and contact time, micro bubbles are superior in capturing the smallest of oil particles to bring them to the surface for skimming.

Features

Important features include:

- High efficiency co-feed flow, single counterflow or dual counterflow designs
- Counterflow designs provide total 'gas blanket' lift design
- Air lift float options provide improved float deaeration
- Diffusion baffles facilitate float removal efficiency
- Choice of mixed or separate loop recycle systems to meet application requirements
- Highly efficient 'dense white water' lift systems
- Electrolytic gas generators supplied for critical ultra fine gas bubble production
- Selection of bubble size to improve separation efficiency
- Dewatering rake options available
- Froth/foam wipers for high float loads
- Reaction zone retentions to suit separation phase type and density
- Zone design principles

Pilot Plant

Waterex conducts ongoing development of all our flotation technology using our in-house laboratory and pilot plant facilities. These facilities can be used for recommending and sizing equipment to suit your application.

