

## Foam Fractionators

### Principles of Operation

The Watertec Engineering range of Foam Fractionators are designed to remove Dissolved Organic Carbon (DOC) that is unable to be mechanically filtered, i.e. the removal of dissolved surface-active (surfactants) substances from solution.

#### Foam fractionation is also known as

- Protein Skimming.
- Protein Foam Skimming.
- Foam Separation.
- Air stripping.

#### Process Description

Air is externally diffused into the water stream by way of an injector. Small air bubbles are then formed within the Foam Fractionator water & suspended within the solution.

Organic molecules collect on the surface of the individual air bubbles, by the process of absorption. The bubbles then rise to the surface to form proteinaceous scum, which is then "floated off" to waste. This foam contains:

- Soluble proteins.
- Amino acids.
- Some organic dyes
- Fatty acids.
- Fats.
- Carbohydrates.
- Enzymes.
- Detergents.
- Many inorganic compounds.
- Metal ions (particularly copper and zinc) that are tied up in sulphide compounds, iodine, phosphorous, tiny cells of algae, protozoa, bacteria and tiny buoyant particles of organic detritus.

The addition of ozone to the process promotes micro flocculation; electrostatic attraction improves the removal efficiency of organic wastes and reduces turbidity.

Foam Fractionator's Ozone Injection Panels are designed to complement the Ozgen Ozone Generation System. The injection panel blends ozone gas supplied by the ozone generation system with ambient air, which is transferred into the ozone injector.



#### Applications:

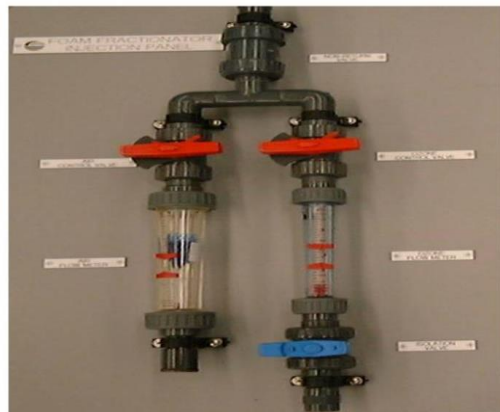
- Aquariums/Oceanariums.
- Aquaculture.
- Industrial Wastewater.
- Mining.

#### Selection:

Please contact Watertec Engineering for assistance in selection & design.

#### Options available include:

- Various sizes (flowrates).
- Various materials of construction.
- Injector systems.
- Injector manifolds.
- Injector booster pump systems.
- Auto cleaning of scum cone.
- External finishes.
- Flange standards.



### AUSTRALIA

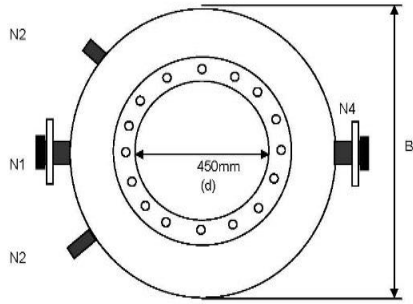
WATERTEC ENGINEERING PTY LTD  
Tel: +61 7 3287 1288  
Email: sales@watertecengineering.com

[www.watertecengineering.com](http://www.watertecengineering.com)

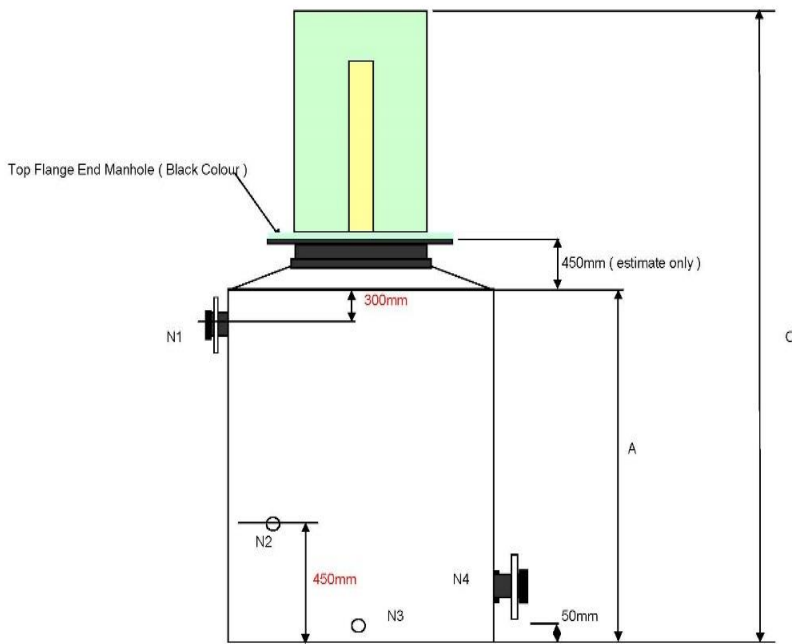
### MALAYSIA

WATEROTEC (M) SDN BHD  
Tel: +603 6092 9029  
Email: sales@waterotec.com





N1 = Process Water Intake



N2 = Ozone and Air Input

N3 = Drain

N4 = Process Water Outlet

B A C

Flow m3/hr	Flow L/sec	Diameter	Height of Wall in Meter	Overall Height	Flow In Mm/s	No of Inlets	Inlet Mm NB	No of Outlets	Outlet Mm NB	Total Gas Flow M3/hr	Boost Pump M3/hr at 3.5 Bar
2	0.56	0.20	2.00	2.60	17.68	1.00	0.02	1.00	0.02	.35	.70
6	1.67	0.35	2.00	2.60	17.32	1.00	0.03	1.00	0.04	1.05	2.10
10	2.78	0.35	3.00	3.60	28.87	1.00	0.05	1.00	0.08	1.75	3.50
20	5.56	0.45	3.00	3.60	34.93	1.00	0.05	1.00	0.08	3.50	7.00
30	8.33	0.60	3.00	3.60	29.47	1.00	0.08	1.00	0.10	5.25	10.50
40	11.11	0.80	3.00	3.60	22.10	1.00	0.10	1.00	0.10	7.00	14.00
50	13.89	1.13	1.08	2.18	13.85	1.00	0.10	1.00	0.15	8.75	17.50
75	20.83	1.13	1.52	2.62	20.77	1.00	0.15	1.00	0.15	13.13	26.25
100	27.78	1.13	3.10	4.20	27.69	1.00	0.15	1.00	0.15	17.50	35.00
125	34.72	1.56	1.82	2.92	18.16	1.00	0.15	1.00	0.20	21.88	43.75
150	41.67	1.56	2.10	3.20	21.80	1.00	0.15	1.00	0.20	26.25	52.50
200	55.56	1.89	2.10	3.20	19.90	2.00	0.15	1.00	0.20	35.00	70.00
250	69.44	1.89	2.50	3.60	24.88	2.00	0.15	2.00	0.20	43.75	87.50
300	83.33	1.89	3.50	4.60	29.86	2.00	0.15	2.00	0.20	52.50	105.00

**AUSTRALIA**  
**WATERTEC ENGINEERING PTY LTD**  
 Tel: +61 7 3287 1288  
 Email: sales@watertecengineering.com

**MALAYSIA**  
**WATEROTEC (M) SDN BHD**  
 Tel: +603 6092 9029  
 Email: sales@waterotec.com



[www.watertecengineering.com](http://www.watertecengineering.com)