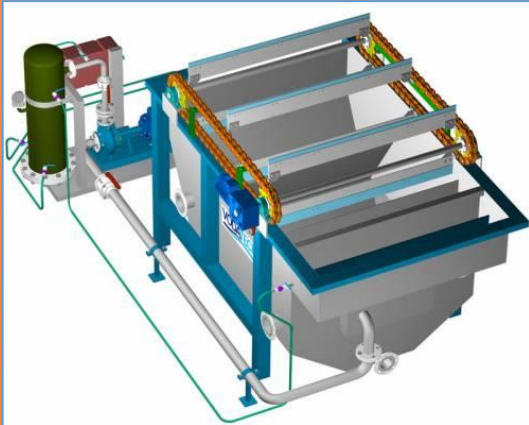


FLOTATION UNITS D.A.F.



Flotation units (UF) remove fats, suspended solids and organic pollution from the wastewater.

Flotation units (UF) or flotators are intended primarily for pre-treatment of concentrated food industry wastewater. With outstanding results are operated in meat factories, slaughterhouses, poultry plants, dairies and other productions of the food industry and also in other industries such as paper and plastic recycling, or in oily municipal wastewater.

Flotation significantly reduces mainly extractable contamination (fats), also important are indicators of organic pollution reduction BOD5 and COD. Flotator is usually preceded by a rotary screen (or drum screen) as the first stage of treatment (removes from the water flowing into the flotator coarse, insoluble impurities - such as parts of bones, skins, bristles, glass, paper, etc.).

DAF in these applications reduces suspended solids, fats, greases by around 90%. When used in conjunction with chemical dosing (chemical unit - CHU) greater removal rates can be achieved with colloidal material and some surfactants also being removed.

Another application of flotation is in thickening of excess sludge from municipal wastewater treatment plants, which is called DAFT (Dissolved Air Flotation Thickening). Without dosage of flocculant is a sludge with input concentrations 0.6-1% concentrated by flotation to 4-5%.

Flotation units operate on the principle of dissolved air flotation (DAF). Flotation is a water treatment process that clarifies wastewaters by the removal of suspended matter such as oil or solids. The removal is achieved by dissolving air in wastewater under pressure and then releasing the air at atmospheric pressure in a flotation tank. The released air forms tiny bubbles which adhere to the suspended matter causing the suspended matter to float to the surface of the water. On the surface in a flotation tank gradually forms a compact layer of compacted sludge that is removed by skimming device and thus removed from wastewater.

REDUCTION OF POLLUTION BY FLOTATION

(Always depending on type and nature of wastewater pollution)

Indicator	Physical flotation	Chemical-physical flotation
Fats	75%	90%
Suspended solids	75%	90%
Organic pollution BOD5	40%	65%
Organic pollution COD	40%	65%

FLOTATION UNITS D.A.F.



Main parts of the flotation unit:

Flotation tank - is divided into sections for intake, sedimentation, flotation, sludge removal and discharge of water.

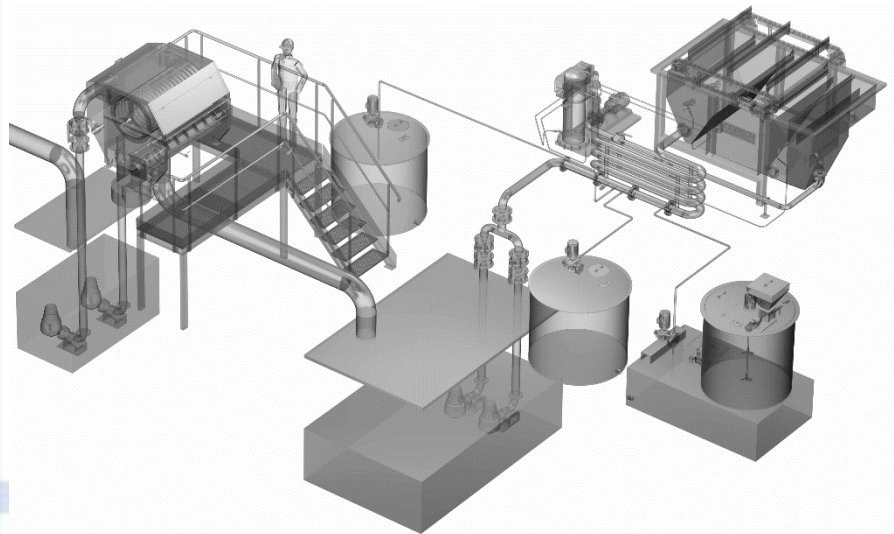
Recirculation circuit - recirculating water is saturated with air and subsequently released into the flotation space. The pressure vessel is certified according to CE 97/23.

Scrapping - removes thickened sludge from the water surface in flotator.

Optional chemical dosing - through **chemical unit (CHU)** dosage of flocculants and coagulants to enhance the efficiency of flotation.

We always engineer our flotation units with respect to the specific conditions where it will work. The resulting effect is not only influenced by the structural elements of the flotator itself, but also by these technological parameters:

- nature of pollution of waste water,
- surface load of suspended solids,
- capacity load of flotation,
- retention time in flotation.



Typical technology scheme for wastewater pre-treatment - mechanical filtration by a rotary screen (or drum screen) with integrated screening press, chemical treatment by chemical unit dosing coagulant and flocculant, and flotation process of fine treatment by the dissolved air flotation D.A.F – flotation unit.

FLOTATION UNITS UF - TECHNICAL PARAMETRES AND OUTPUT

Type	Capacity	Surface	Weight	Full weight	Pump input	Length	Width	Height
	m ³	m ²	kg	kg	kW	m	m	m
UF 3,6	1,5	1	400	1900	5,5	2,0	1,4	1,9
UF 5	2	1,8	500	2500	5,5	2,7	1,5	1,8
UF 10	2,5	2,7	800	3300	5,5	2,7	2,0	1,8
UF 20	4,5	5,4	1000	5500	7,5	3,9	2,2	2,1
UF 30	6	4,7	1400	7400	7,5	3,3	2,2	2,6
UF 40	11	6,8	1600	12600	11	4,4	2,2	2,6
UF 50	12	9	1800	13800	11	5,5	2,2	2,7
UF 60	13	10	2000	15000	11	6,0	2,2	2,7
UF 80	15	11	2600	17600	15	6,5	2,2	2,7
UF 100	18	14	3000	21000	15	8,0	2,2	2,7
UF 125	22	16	3300	25300	15	9,0	2,2	2,7
UF 150	39	22	4500	43500	15	7,8	3,7	3,5
UF 200	46	22	7000	53000	15	7,8	3,7	3,8
UF 250	46	36	7500	53500	15	11,2	3,7	2,8