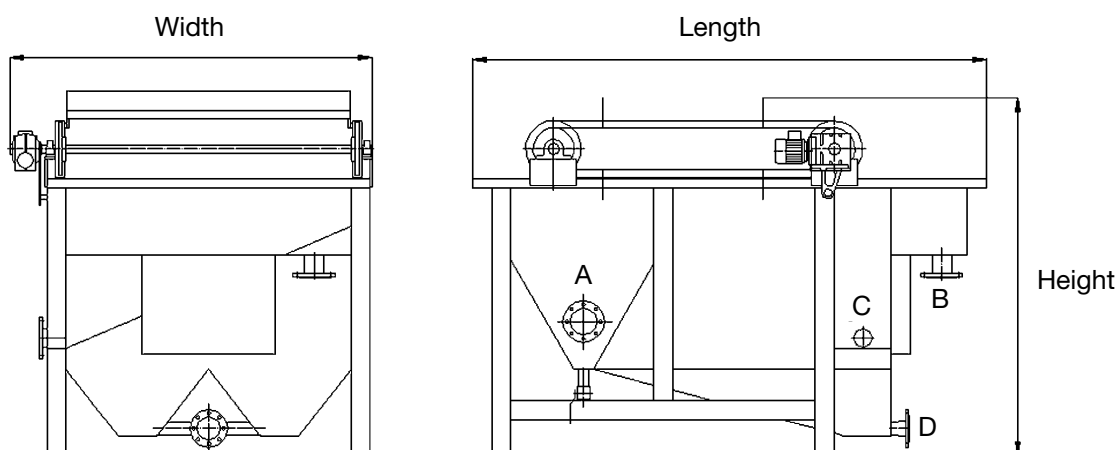


Dimensions		UF-5	UF-10	UF-20	UF-30	UF-40	UF-50	UF-60	UF-70	UF-80	UF-90	UF-100
max. flow	m <sup>3</sup> /h	5	10	20	30	40	50	60	70	80	90	100
capacity	m <sup>3</sup>	2	2.5	4.5	6	11	11.5	12	15	17	19	24
working capacity	m <sup>3</sup>	1.7	2	3.8	5.3	8	10	10.8	12.5	14.3	16.3	22
scraped surface	m <sup>2</sup>	1.8	2.7	5.4	4.7	4.7	8.5	9	10.3	11.7	10	13
weight empty	kg	500	800	1000	1400	1600	1800	2000	2300	2600	2800	3000
weight full	kg	2500	3300	5500	7400	11100	13300	14000	17300	19600	21800	2700
output	kW	4.37	4.37	5.87	7.87	11.37	11.37	15.37	15.37	15.37	15.37	15.37
length	m	2.7	2.7	3.9	3.4	4.4	4.4	4.6	5.2	5.7	6.3	6.2
width	m	1.5	2	2.3	2.5	2.5	2.9	2.9	2.9	2.9	2.9	2.9
height	m	2	2	2.2	2.6	2.6	2.6	2.8	2.8	2.8	2.8	3.5
inlet A (diameter)	mm	100	100	100	200	200	200	200	200	200	200	200
outlet B (diameter) treated water	mm	100	100	200	200	200	200	200	200	250	250	250
outlet C (diameter) floated matter	mm	100	100	200	200	200	200	200	200	200	200	200
outlet D (diameter) sediment	mm	80	80	150	150	150	150	150	150	150	150	150

See above table for dimensions



### About WPL Limited

WPL Limited provides innovative and reliable wastewater treatment, rainwater harvesting and grease management systems for domestic, commercial and industrial markets as well as holding a prominent position as a supplier to the water companies. As an internationally recognised leader in the design, manufacture and supply of both standardised, and bespoke environmental solutions, WPL Limited is dedicated to ensure the provision of high quality products and services.

### Environmental Policy

WPL Limited is ISO14001 accredited. WPL Limited rigorously fulfils its vision of protecting the environment by delivering reliable wastewater solutions. A strong focus on quality and compliance ensures that all wastewater treatment systems are designed to work within the guidelines of the British Water Code of Practice and exceed all present and proposed discharge consent standards enforced by the Environment Agency, SEPA and other regulatory authorities.



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INVESTOR IN PEOPLE



# WPL DAF

Dissolved air flotation - industrial effluent treatment

Performance, quality, reliability



sludge thickening | industrial effluent treatment  
new projects | existing plant upgrades | replacement plants



Environmental Wastewater Solutions

# The WPL DAF (Dissolved Air Flotation) for Industrial Effluent Treatment

## Background

The DAF system has been in common use across Europe for over 20 years. Originally used in the paper and pulp sector, the DAF system is now used in many other industrial applications.

The primary objective of a DAF system is to reduce COD (Chemical Oxygen Demand) loading, this is generally done by efficient removal of high COD contaminants including fats, oils and greases, colour, organic matter and colloidal material when used in conjunction with chemical dosing.

The main objective is to reduce trade effluent charges on the Mogden formula, or to achieve compliance for sewer discharge.

Primary applications include:

- dairy waste
- food processing waste
- abattoirs
- process waters
- waste waters

Furthermore, WPL DAF plants can be designed as small, compact and robust systems with a high rate of operation. These systems are capable of coping with reasonable variations in influent wastewater quality and variations in flow.

Balancing tanks can be used to even out any very large flow or waste variations.

## Basic Operation

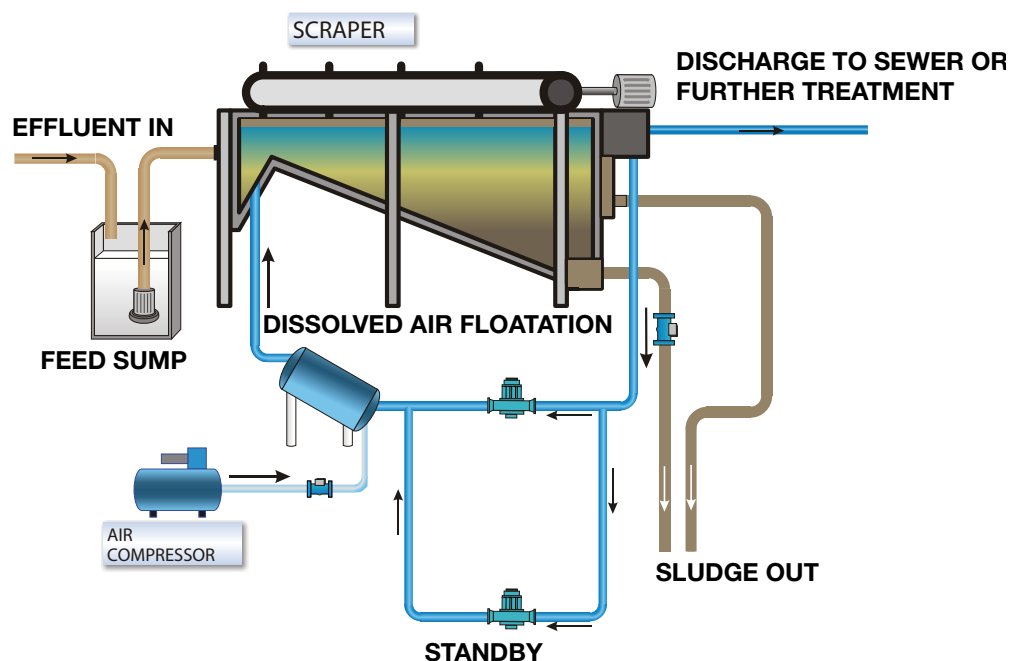
The WPL DAF is a purely physical process which operates on a reasonably simple design philosophy. Incoming effluent may require pre-treatment as necessary, e.g. the addition of chemical coagulant(s) and/or flocculant(s) may be required with associated mixing and coagulation/flocculation stages. Adjustment of pH may also be a consideration to ensure optimum conditions for coagulation and flocculation.

The incoming effluent enters the flotation vessel where it comes into contact with recycled, treated effluent (sometimes termed white water). The percentage of the total effluent flow into which air is dissolved under pressure and subsequently recycled will be determined by several factors. Increasing the pressure within the vessel where the air is being dissolved ensures that a higher concentration of air dissolves into the liquid phase than is possible at atmospheric pressure.

Once this saturated effluent enters the flotation tank, the pressure is released back to atmospheric pressure. This immediately results in the recycled flow becoming supersaturated, resulting in the generation of microbubbles as the dissolved air comes back out of solution.

These bubbles attach to, and form within, the solids or chemical flocculants entering the vessel, causing them to float to the surface where they are retained and subsequently removed by a mechanical skimmer.

Within the rectangular flotation tank, the skimmer mechanism consists of a series of paddles or 'flights' which run on a plastic corrosion resistant chain, and skim just below the surface of the tank removing the 'float' into a trough for recovery of the sludge. To eliminate the risk of sludge build-up on the flotation tank floor, the design may also incorporate a floor scraper.



## Features:

- Main structural components are manufactured in 304 stainless steel for added corrosion resistance
- Higher specification can be supplied if required
- Reinforced plastic components used to reduce wear and corrosion, reducing maintenance time and cost



- White water system utilises a pressure vessel to negate the need for diffusers within the flotation tank, hence reducing maintenance requirements
- PVC coil pipe flocculator eliminates corrosion, and comes with numerous sampling and injection points to improve efficiency
- System comes complete with safety guards, grids, ladders and handrails to provide safe working access.

## Case Study -

### Trade effluent treatment solution for large smoked fish producer in Scotland



Internals of rotary drum screen

**Type of effluent** Wastewater from de-boning, smoking, marinating, filleting and CIP (Cleaning In Place) washdown.

**Objective** To meet trade effluent consent limits and reduce trade effluent charges.



Coil pipe flocculator

**Solution specified** COD (Chemical Oxygen Demand)  
FOG (Fat, Oil and Grease) removal

**Process** Pre-screen with a Rotary Drum Screen to remove gross solids, bones and skin. Effluent is then pumped through a coil pipe flocculator incorporating a static mixer where primary coagulant and polyelectrolyte are dosed to condition the wastewater prior to DAF treatment.



DAF cell

The clean effluent from the DAF is pH corrected before discharge to sewer, and sludge from the DAF unit and screenings are de-watered by filter press.