

DAF PLANT (DIS-SOLVED AIR FLOTATION)

PRODUCT DESCRIPTION



Rendertech Dissolved Air Flotation Plants (DAF) provide the solution to many wastewater treatment problems. They are compact, efficient, simple to operate and economical to run. They can be supplied without chemical treatment, or with chemical treatment to increase the degree of purification.

FEATURES

- Optimum purification efficiency
- High contamination removal in a compact plant
- High total solids content in the sludge reduces sludge volume
- High quality construction from predominantly stainless steel
- Simple to operate and maintain
- Modular construction from 'standard elements'
- High performance **Rendertech** dissolved air generation system (**DAS**)
- Automatic operation.

Dissolved Air Module (DAS). The third module, for applications with chemical treatment, is the **chemical treatment module**. The components in the chemical treatment module are dependent on the application and frequently incorporate the Rendertech **Automatic Polymer Makeup Unit (PMU)**.

The **Rendertech DAF** system comprises three modules. The main module is the **flotator tank**. This is complete with scraper system and integral sludge tank. The second module is the dissolved air generator, the Rendertech

PROCESS DESCRIPTION

The following description is for a typical wastewater purification application. Wastewater from the plant is collected in a **collection sump** and pumped with a submersible pump to a **screen** for removal of coarse solids. The screened waste water is then piped to a balance tank. The purpose of the balance tank is to equalise the fluctuation in flow rate and contamination level in the incoming wastewater. From the balance tank the wastewater is pumped by the feed pump to the flotator tank at a constant flow rate.

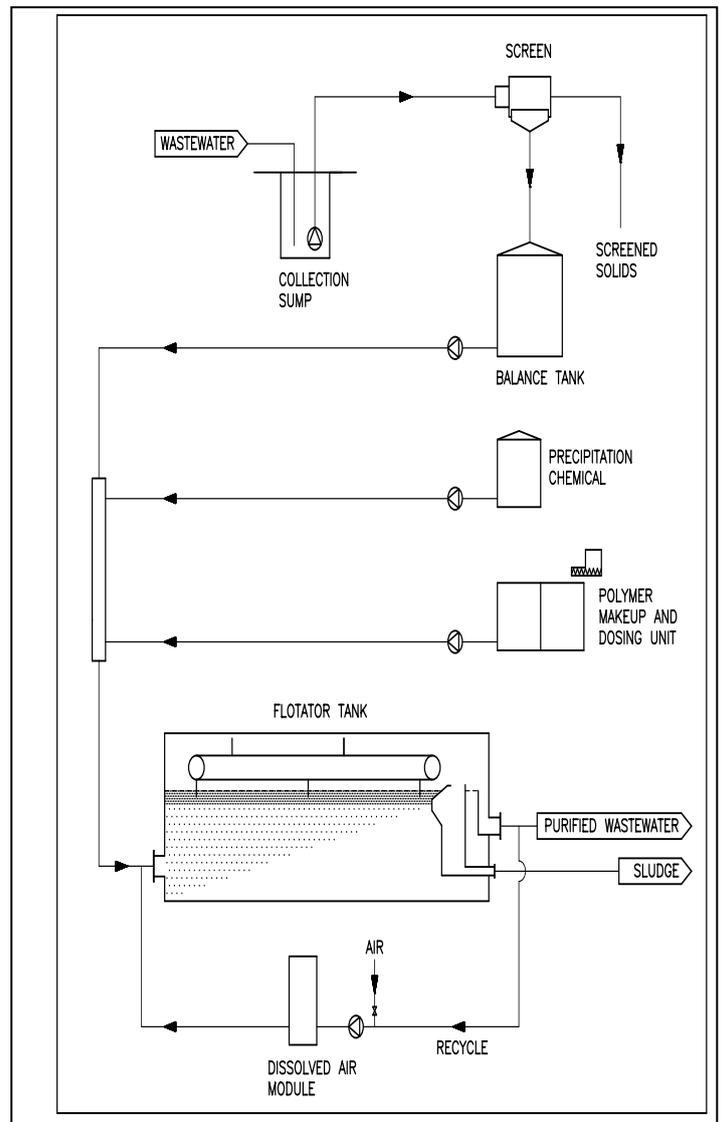
Prior to entering the **flotator tank**, a coagulant is added to precipitate the contaminants and form a floc. The floc is stabilised by the addition of a suitable flocculent.

A pressurised, air saturated, air water solution from the **dissolved air module (DAS)** is added to the **flotator tank**. The depressurisation to ambient pressure causes the air to be released as a cloud of micro bubbles which attach themselves to the suspended material and floc. These impurities then rise to the flotator surface, building up a layer of sludge that is periodically removed by a slow moving scraper. The sludge is collected in the sludge tank and pumped by the sludge pump to further treatment or disposal.

APPLICATIONS

Dissolved Air Flotation is effective on a wide range of wastewater purification applications including:

- Slaughterhouses (poultry, cattle, pig, sheep)
- Fish and fish canning
- Rendering and fishmeal
- Tanning
- Dairy and dairy products
- Plastic recycling
- Vegetable canning
- Potato crisp manufacture
- Brewery
- Beverage
- Mineral oil refining
- Electroplating
- Pulp and paper
- Thickening of biological sludges tank farms



RENDETECH MOBILE PILOT PLANT

Wastewater characteristics can be highly variable from plant to plant even in the same industry. The contamination levels can also change during the day. To remove the uncertainties in selecting DAF plant, Rendertech has developed a 1.5m³/hr mobile pilot plant for on factory testing. From a short testing period we can:

- Demonstrate the performance
- Determine the purification levels
- Determine chemical requirements and consumptions
- Ascertain sludge characteristics.