



Continuous flotation unit

Flocculation for continuous liquid sugar decolourisation



Application

A flotation system is used to accumulate flocculants and remove colour from sugar. In a liquid sugar production process connected to a sugar decolourisation system, the dissolved sugar is transferred to the continuous flotation unit after heating. It then returns to the plate heat exchanger for energy recovery.

Dry sugar colour is normally measured using the International Commission for Uniform Methods of Sugar Analysis (ICUMSA) scale. Beverage producers typically require an ICUMSA rating of < 35.

A typical application is:

- Decolourising sugar solutions

Highlights

- Provides high profitability if raw sugar quality is low
- High process reliability and decolourisation efficiency
- Highly automated plant designed for long production runs
- Highly efficient flocculation due to radial jet mixer technology
- Sweet water recovery

Working principle

If the sugar floc potential is positive and ash content is below 500 ppm, the dissolved sugar at 85 °C can be treated for floc removal in a continuous flotation unit. Depending on the recipe of reactants used, 30 - 70 % decolourisation can be achieved. Also depending on the recipe, ash content in the dissolved sugar may increase by around 20 %.

The continuous flotation unit includes a sugar recuperation system through a rotary vacuum filter to recover sweet water from the sludge generated.

The solution then passes through an outlet on the continuous flotation unit into activated carbon treatment and, as final step, into an ion exchange system (without an initial sand filtration stage) to achieve the final decolourisation required and final deodorisation.

Technical data

The continuous flotation unit is a complex unit with a bespoke design to meet each customer's specific requirements and raw sugar specifications.

The unit is also always designed to fit the customer's individual decolourisation room layout.

Electrical power	400 V, 50 Hz Other supply voltage or frequency available
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Compressed air	Main panel 600 kPa (6 bar)
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Control panel

The continuous flotation unit is controlled by an Allen Bradley ControlLogix or Siemens PLC. This can be fitted in a cabinet located near the unit.

