

# Treatment of coating effluents

## Separation by continuous centrifugation



The technology of separation using centrifugation is a patent pending ABB solution which enables to recover efficiently and economically all components contained in the coating effluents in order to reuse them in the composition of fresh coating colour.

01

01 Treatment unit with centrifugation technology

### Recovery of coating effluents

Effluents are produced during the coating process in papermaking industry and are generated by the cleaning of circuits and coating heads. They contain highly polluting materials and they need to be treated at the mill site.

The centrifugation technology recovers 98-99,5% of the reusable organic and inorganic components which are initially present in the coating colours. Furthermore, the centrifugation unit induces lower investment, operating and maintenance costs.

### A two-stage treatment

Effluents are treated at low solid content through a two-stage treatment :

- 1st stage = chemical treatment by mixing effluents with additive to improve the separation of mineral and organic components,
- 2nd stage = physical treatment using a centrifugation unit to separate the mineral and organic components from the filtrate.

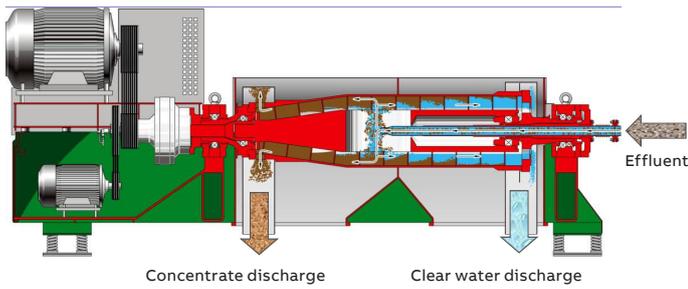
The recovered filtrate can be recycled, discharged or subjected to a further treatment to obtain clarified water. Because the recovered filtrate has a reduced COD\* and BOD\*\*, it is particularly advantageous to transfer it to a traditional sewage plant.

The recovered concentrate is re-used as component in a new fresh coating colour recipe.

### Advantages of centrifugal separation

- High capacity continuous treatment.
- Recovery of coating raw materials in a concentrated stream.
- Reduction of COD\* and BOD\*\*.
- Simplified effluent treatment with a compact, robust, low energy system.
- Automated operation with full control system
- Cost-effective treatment to meet environmental regulations.
- High availability process.
- Low maintenance cost.
- Low energy consumption.

\*COD: Chemical Oxygen Demand  
 \*\* BOD: Biochemical Oxygen Demand



01

02

01 Example of centrifugal separator

02 Concentrate containing organic and inorganic materials

### Features and performance

The separating treatment is carried out at high speed in a centrifugal separator. The flow rate of separator is comprised between 1-15 m<sup>3</sup>/h.

The treatment method can include a third step consisting in diluting the concentrate to reach a determined solid value appropriate for its re-use. This adjustment is done continuously using a dynamic mixer. Once the solid value is reached, the concentrate is stored in a storage tank.

Adding concentrate into a fresh coating colour does not induce any modification of the viscosity and rheology properties.

#### ABB France Industrial Automation Division Cellier Activity

700 bd. Jean-Jules Herbert  
73100 Aix-Les-Bains, France  
Tel.: +33 4 79 35 05 65  
E-mail: info.cellier@fr.abb.com

#### Contact for the U.S.A.:

Tel.: +1 832 421 4864  
E-mail: pablo.e.garce@us.abb.com

We reserve the right to make technical changes or modify the contents of this document without prior notice. With regard to purchase orders, the agreed particulars shall prevail. ABB does not accept any responsibility whatsoever for potential errors or possible lack of information in this document.

We reserve all rights in this document and in the subject matter and illustrations contained therein. Any reproduction, disclosure to third parties or utilization of its contents – in whole or in parts – is forbidden without prior written consent of ABB.

Copyright© 2018 ABB