

V-Fold Folding Belt Filter Press Case Study No. 2a - Cardboard / Printer Wastewater (via IAF)

THE PROCESS

A cardboard carton manufacturer uses water-based inks for printing. The effluent plant treats wastewater with coagulants, polyelectrolyte and “antifoam” to flocculate ink. This is removed with an induced air flotation process that makes clean water for discharge to sewer and ink slurry. The effluent plant originally used a tank for intermediate slurry storage and a “plate and frame” filter press to make filter cake for disposal. The “plate and frame” filter was expensive and inconvenient to run. In particular:

- It needed to be emptied about every shift, occasionally at inconvenient times when the Operator was busy.
- Filter cloths quickly blinded despite insitu cleaning and needed removal for washing.
- Ink slurry was difficult to hold in suspension. Thick sludge quickly built up in the slurry storage tank and needed to be manually cleaned.

The “plate and frame” filter was replaced with a **V-FOLD™** filter model SS600. Ink slurry is pumped directly from the flotation unit to the filter with additional polyelectrolyte dosed into the pump suction to assist filtration.

PERFORMANCE¹

Feed slurry is highly variable in flowrate and solid content and the induced air flotation unit occasionally “floods”. The unique V-FOLD™ design allows filter cake to be consistently produced. About 80 litre/hour of cake is made and removed from the site with other “dry waste”.

Performance depends on prevailing operating conditions, but typical feed slurry has 2 - 5% dry solids and typical filter cake contains more than 20% dry solids.

BENEFITS

- The V-FOLD™ filter is able to operate continuously without the need for frequent Operator intervention.
- It does not require intermediate slurry storage.
- It does not require filter fabric removal for washing.
- Factory personnel estimated the V-FOLD™ paid for itself within 12 months.



General arrangement of **V-FOLD™** before removal of “plate and frame” filter.



V-FOLD™ feed cavity during a process upset



V-FOLD™ filter cake

¹ NOTE: As with all filters, performance depends on prevailing conditions and data noted here is specific for this particular factory at the time of testing.