

## Case History

# KemForm P Retention & Drainage

### Market Segment

Printing & Writing Offset Uncoated Freesheet in Northeast US

### Mill Situation

Wet End

Fourdrinier paper machine running at 2500 fpm, 71,000 tons per year

Basis weights: 27# to 50#

Furnish: 55% hardwood kraft, 20% softwood kraft, 12%vDIP, 13% filler

Chemicals

Retention and drainage program: cationic PAM (0.75 to 1.5 lb/ton) pre-screen, and bentonite clay (2 to 10 lb/ton) post screen

Cationic starch prior to fan pump

Alkynyl succinic anhydride (ASA) sizing system

### Customers Objective

Replace incumbent program that historically provided lost tonnage due to equipment issues and complexity. Estimated lost tonnage due to equipment/program failures was ~26 tons per week. Chemical cost savings desired, however primary driver was lost production due to equipment failures.

### Proposed Solution

Kemira Chemicals representatives completed a process survey of the paper machine wet end to identify the optimum feed locations and retention-drainage system for improving product and machine performance. A The KemForm P retention system was recommended, which included Fennofloc ZN029 polyaluminium chloride pre fan pump, Retain Plus 9520 anionic PAM pre-screen, and Fennosil ES-210 anionic micropolymer post screen.

## Customer Benefits

- Consistently equal or better paper quality achieved
- Consistent production increase up to 2 TPH versus incumbent program
- Estimated increase in tonnage is 6,550/year with an ROI ~US\$5MM in incremental revenue or ~US\$1.6MM in profit potential
- Improved runnability delivered the best production runs in 6 months
- Equipment/program issues were eliminated which equates to ~US\$1MM annual improvement or over US\$300,000 per year of profit potential
- First Pass Retention 88-94%, with FPAR at 60-80%
- Sheet formation was always equal or better
- Retention chemical costs equal to incumbent program

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