Improving Machine Runnability with an Advanced Deposit Control Program

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ABSTRACT

During the Alkaline fine Paper making process, the major problem of inorganic & organic deposition observed in almost all the mills. Amazon Papyrus Chemicals Ltd. Invented a new technology called AMOX to solve this deposition problem for better machine runnability. In addition, Amazon also implemented an advanced deposits control strategy by establishing a regular documentation of system contamination, biocide activity, machine production, sheet breaks, and additives usage & performance. The regular monitoring carried out by mill showed that this new technology does not interface with the performance of the additives currently used in the machine with much improved machine runnability.

Background: Deposit Outbreaks Dragged down Mill profitability

An alkaline fine paper machine in Indonesia was dragged down by deposit related problems that led to frequent sheet breaks, reduced quality and output, and reduced profits. Onsite personnel attempted to, overcome the deposition problems outbreaks with heavy doses of biocides, frequent white water drains and machine wash-ups, which carried a high cost to the mill.

Paper making system provides favorable conditions for deposition buildup. Contamination may come from many different sources, including from fresh water, fibers, and additives. The materials which are not retained on the sheet will accumulate in system and interact each other, providing high potential for depositions. As a result of such accumulation, deposits can begin to appear on the machine and some times also appear on the paper. Costly and disruptive "boil-outs" are frequently required to keep the machines running, and the cost of deposit control program can increase at a staggering rate. Though expert in operating and controlling the paper mill machinery, the paper mill's staff was not equipped to confront recurrent deposition.

Objective: Cleaner machine, Improved machine runnability and sheet Quality

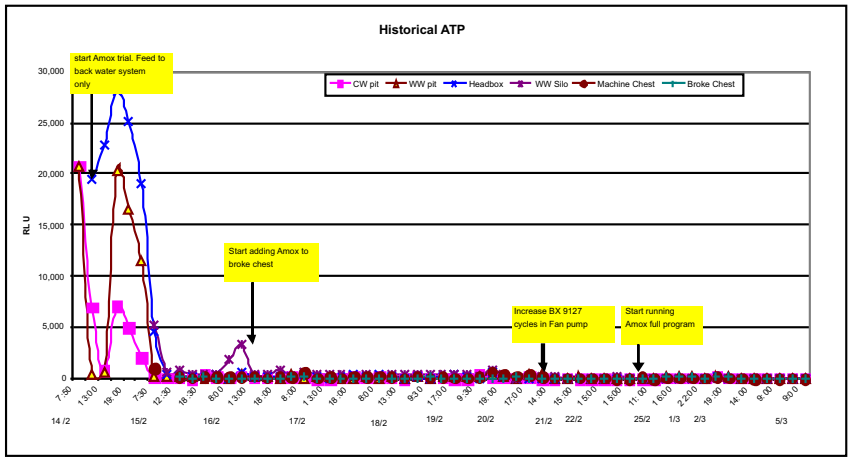
A decision was made to broadly review the entire operation and perform in-depth analysis of the production process. Machine survey and deposit analysis results exposed a sequence of problem areas, primarily originating in the approach, additives, broke, save all systems. Strict screening of deposit control products was also conducted. Through computer modeling using program, it was also discovered that the current biocide dosages were regularly falling below effective targets ranges.

Action: Redesign the Deposit Control Program Approach

From years of experience running deposit control program in paper machines throughout Asia, APC understands that solving customer problems frequently requires a comprehensive understanding of the nature of the problems, in depth knowledge of system's mechanical, and operational, as well as the chemical interactions.

In mid November 2006, a thorough review of the deposit control program was conducted. Fundamental to the approach was a comprehensive analysis that took into account mechanical, operation, and chemical aspects of the deposition problem. One crucial element of the plan involved the implementation of APC new technology of deposit control program called Amox. As part of mill regulation, the new technology must first pass the eleven steps procedure of introducing new technology to the mill. This ensures the compatibility and applicability of this new technology with the current process. This process, in addition to the equipment installation and delivery of the products, takes nearly three months until the Amox program actually running on the machine.

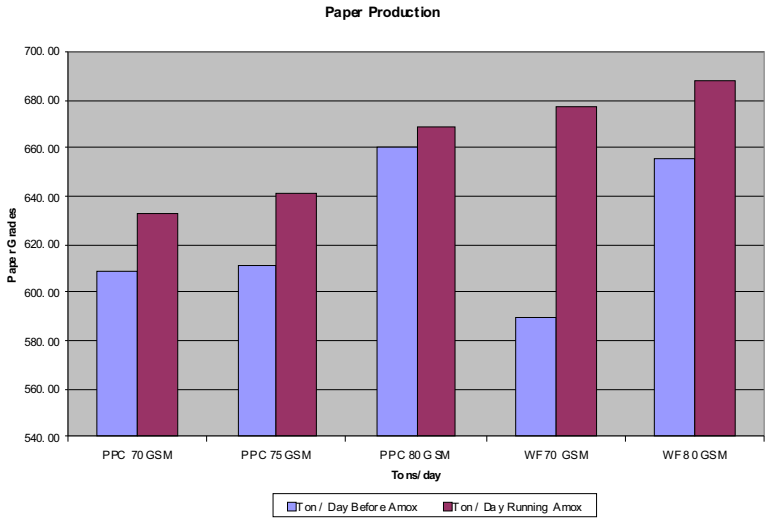
With a full support of the regional technical support team, the trained local team implemented an entirely redesigned deposit control program by applying the Amox program. In addition, we also implemented an advanced control strategy by establishing a regular documentation of system contamination, biocide activity, machine production, sheet breaks, and

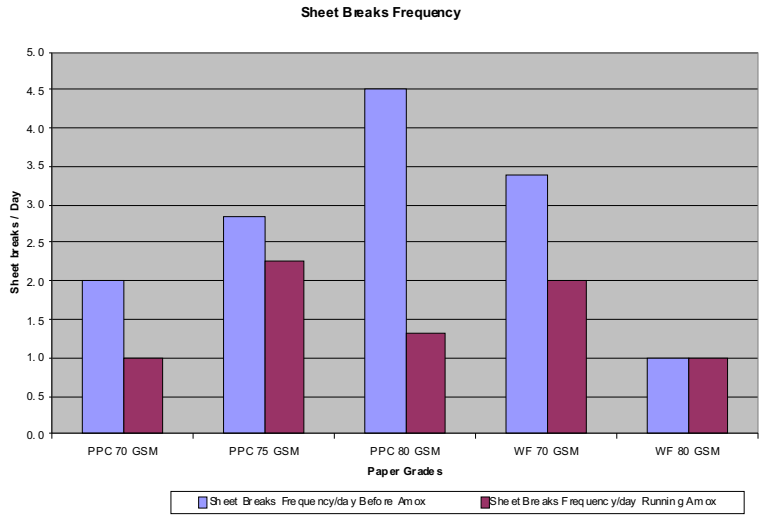


Significant reduction of system's ATP after Amox program is implemented

Amazon Papyrus Chemicals
74-B/1, Anrich Indl. Estate, Bollaram,
Medak Dist. (A.P.)

The sight glass of top former was kept clean even after running with 17 days with Amox





Cobb Size, F		% variation
Before Amox	Running Amox	
21.86	20.55	-6
22.45	21.64	-4
22.70	22.67	0
24.08	23.60	-2
21.80	21.93	1

FPR, %		% variation
Before Amox	Running Amox	
85.63	86.39	1
86.93	87.80	1
86.50	86.93	1
86.71	87.10	0
89.00	88.03	-1

additives usage & performance. This multi-sided approach to the problem has established new control standards that minimized the risk of having deposit outbreaks and significantly reduced the possibility of larges scale deposit outbreaks.

Results: Higher Performance, Higher Profitability

By end of March 2007, having implemented the Amox program to resolve recurrent slime outbreaks, Mill saw a significant improvement of the overall performance indicators. The system contaminations throughout the wet end system were mostly reduced by two-three logs. This results in cleaner machine, less deposit related holes and sheet breaks, reduced total machine sheet breaks. This tremendous improvement in microbiological control program represented a major improvement in machine runnability as well as paper quality which translated into a significant improvement in mill's profits. This really helps customer to continue pushing to higher levels of productivity.

Compatibility with machine additives

In addition to improved machine runnability, The regular monitoring carried out by mill showed that this new technology does not interfere with the performance of the additives currently used in the machine. First pass retention, First Pass Ash retention, and Cobb size performance are continuously maintained while maintaining the most cost effective dosages.

Amox : New Approach of Deposit Control

Amox is a highly effective and economical deposit control agent for the Pulp & Paper Industry. The product is non toxic as received and is easy to handle. When mixed with mill Hypochlorite, it releases an effective deposit control agent which will prevent the build up of inorganic and organic deposits. With the start-of-the-art feed equipment as well as the proper application and monitoring strategy, Amox helps the paper machine efficiency by eliminating troublesome deposition which will lead to increased production rates, reduced paper manufacturing costs and extend time between shuts for cleaning.