
Innovation in Coating Colour Management

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The definition of the exact coating colour amount is a great technical challenge in the production of paper. Especially if several paper machines with various different coating aggregates, coat recipes and different coat consumptions have to be coordinated for various paper grades and production times.

For these new technical solutions, the following is necessary:

- The theoretical calculation of coating colour consumption on the basis of the production schedule.
- A continuous adaption of the coating colour calculation to fit the real consumption.
- A change of production for compatible and incompatible coating colours.
- A time optimized process of change-over and transfer sequences of the coating colour mixer.
- A timely and coordinated transfer of the coating colour to the work stations.
- Coordination of the production schedule and coating colour conditioning for a timely supply of suitable base paper and coating colours at the coating units during production changes.

Until now, this complex task was performed manually by one person in the coating kitchen. The coating colour management system supports this job and avoids coating colour losses, start-up losses of base paper and delays during production changes. Coating colour management is a new mathematical process that takes into account the whole production process beginning from the logistical planning up to the finished paper. A matrix coordinates production planning; coating colour preparation; the coating colour supply to the paper machine including mixing, delay and transfer times; as well as the necessary base volumes which are required to operate such a complex system.

At Sappi Alfeld, this engineered system is employed to manage the entire coating kitchen, the supply of 3 paper machines and the coating unit. A reduction in coating colour losses of 50% is expected. This equals annual savings of 1 million euro.
