

Water loop optimisation highlight of an existing Paper mill for Testliner

K.-O. Wichmann and W. Gerspach; DS Smith Paper Deutschland GmbH
Aschaffenburg / Germany

DS Smith Paper Deutschland GmbH produces 380.000 tons of Fluting and Testliner grades on PM1 in Aschaffenburg using 100 percent recycled fibre.

In order to maintain a high reliability on the paper production process one key parameter is to have good and stable process water quality. In times of reducing the specific water consumption the mill was faced with upcoming disturbances like scaling which was originated by a poor water quality. As a main problem for scaling high Calcium concentration was focused. As a result of an increased web break rate and daily cleaning activities the time efficiency went down and the cost for chemical additives went up.

The origin of the high Calcium concentration was found in high variations of the process pH value which was caused by acidification processes of anaerobic bacteria. In order to achieve a sustained success, ways were found to reduce the acidification processes significantly. The aim was to achieve this without using biocide in the water loop. As key parameters the following points were focused:

- Degree of Acidification
- pH Value
- COD Concentrations
- Retention Time of Process Water

As a result of a continuous improvement process a significant reduction of dissolved Calcium in the process water from a maximum of 160°dH to an average of 65°dH were achieved. As milestones the reduction of operating process water volume by 30 percent, an efficient recirculation of bio treated water to the production process and the shutdown of the poly disc filter for spray waters at the paper machine could be highlighted.