
Energy Savings and improved Runability in the Press Section with new diagnostic Tools

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The ability for precise control the ramp-up in speed and steam during felt start-ups, as well as the capability to predict the timing interval of felt washes and/or end of clothing life, is something that can make the difference in paper making. Sporadic measurements of clothing water content and and/or permeability can be used to assist in these activities, but both of those techniques can be fraught with inaccuracy and technicians who are attempting to take CD profiles can be exposed to risks in a not always friendly environment.

Methodology is presented herein that utilizes new instrumentation from Cristini Diagnostic Systems in a strategy that both monitors the condition of clothing in real time, and can be utilized in a control strategy tied in with machine drive components, steam pressure, and/or chemical dosages, to add an element of control that was not possible in the past.

Monitoring machine clothing has also presented a new variety of safety and environmental concerns. New instrumentation technology from Cristini Diagnostic systems allows real time outputs for clothing moisture content and permeability without requiring operators and technicians to make separate on-machine measurements in dangerous locations. Such practices have been banned in many corporations. Cristini has developed fixed point or traversing measurement heads that allow direct connections to the machine's own DCS/MCS systems for data analysis. Fast Fourier transformation (FFT) capabilities are included with this line of instruments, providing near instantaneous read-out of pulsation or vibration issues.

All water content measurements are conducted utilizing harmless microwave radiation, eliminating the need for costly and less accurate gamma gauge usage.

Monitoring machine clothing allows dewatering optimization. Nip dewatering in favor of Uhle box dewatering, leads to considerable savings on energy in drives and vacuum systems. Diagnostic tools play a key role in defining the correct level of saturation of the felt and therefore the machine process parameter can be adjusted accordingly, in order to reproduce the optimal conditions.

The potential of this technology is described in this paper, showing the success story on the line 02 in DS Smith Porcari
