VISHAY PRECISION GROUP

CASE STUDY

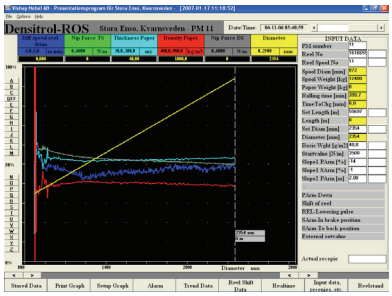
Product Group: VPG Process Weighing

Winding Problems Solved with Reel Density Optimization Controls

Customer: **Stora Enso, Kvarnsveden, Sweden**

Production Lines: **PM8, PM9, and PM11**

Paper Grades: **Newsprint, improved newsprint; uncoated magazine paper**



A control room video display shows the progress of the reel density controls from the spool to the outer wraps.

Project History

Several centimeters of paper left on a parent reel spool is a common sight in many paper mills. These “left-on-spool” or “bottom waste” losses, which cannot be wound because of tension control problems and crepe wrinkles during the initial phases of reel building, may add up to several percent points of lost production. But the Stora Enso mill in Kvarnsveden, Sweden, encountered a more acute problem when three of their newsprint machines started production of value-added improved newsprint grades containing fillers.

Kjell Sundin, Maintenance Technician, says that when the machine started producing improved newsprint with clay filler content up to 5%, the winding problems became very apparent. “The sheet was wrinkling and we were experiencing a lot of breaks in the winder,” he states. The problem was so severe that the machine jumbo reels were often limited to two sets of 125-mm diameter rolls instead of the normal three sets.

To solve this problem, the mill installed three reel density optimization systems (ROS) provided by Nobel Weighing Systems on PM8, PM9 and PM11.

Results summary

The systems have solved the previous reel density control problems and have allowed the machines to produce jumbo reels with the right density profile from the spool up to their maximum diameter. The mill can now produce jumbo reels with a full complement of sets with a minimum of left-on-spool losses.

PM9: After the ROS installation three good sets are now made on the jumbo rolls with filler levels ranging from 10% to 15%. Previously, three quality sets could not be made with filler levels at 5% because of winding problems.

PM8: Parent reels to the winder are run down to about 2 cm to 3 cm of paper left on the reel spool. That is a minimum amount of waste, considering the start-up losses on the supercalenders.

PM11: The winding problems with filled grades on PM 11 were similarly solved.

Customer Comments

Kjell Sundin reports that the bottom set winding problems were solved on all three machines after the installation of the ROS systems.

“On PM9, it was now possible to make three good sets with filler levels ranging from 10 to 15%. We were not nervous about it,” he says. Previously, without ROS, they could not produce three sets with filler levels at 5%.

Kjell Sundin

Machine and Grade Information

PM8, trim width 548 cm, speed 1000 m/min

PM11, trim width 868 cm, speed 1550 m/min

PM9, now shut, ROS moved to PM10

Paper grades: newsprint, improved newsprint, and uncoated magazine paper