

METRIS FOX

ONLINE QUALITY INDEX FOR PULP

Up until relatively recently, bonding and fiber strength when producing pulp could only be measured in a laboratory, which means time, expense, and delayed results, as often the pulp is already made when the tests are being carried out. ANDRITZ's Fiber Online Index has changed all that and provides a tool for real-time monitoring of pulp quality.

"This was a real problem for us originally," says Ismo Nousiainen, CEO (as of January 2018), Metsä Fibre,

"Pulp samples were sent to a laboratory and we would only see the results around a week later. It was often the case that our customers had already used the pulp by the time we had the results.

"The driver for the development of the quality index was the lack of online measurement for pulp refining properties. We were getting online measurements for brightness, fiber length, and dark spots on our lines, but at the time refining properties were based on samples for the laboratory. We wanted to develop an online quality index that correlates refining results and gives customers information about our pulp performance in their processes."

To solve the problem, Metsä Fibre developed a quality online index of its own in 2012. The new tool was so good that it was recognized in 2014 when the index won a quality award

in Finland. Subsequently, the measuring technology and calculation method Metsä Fibre developed has now been acquired by ANDRITZ and rolled out under the brand Metris FOX (Fiber Online Index), which it continues to develop further.

HOW DOES METRIS FOX WORK?

Metris FOX works by collecting data from the mill's production information system (PIM). Every 10-minute slot of production is followed through the production stages. Jari Kapanen, ANDRITZ Development Manager, Digitalization, explains further, "For each 10-minute slot of production, a "basket" program collects variables that are affecting yield and other quality parameters. In each production stage, a Metris FOX user can have an estimation of final product quality and can see how different process variables will affect final quality.

"These calculations are continued through the pulp mill fiberline from the digester to the drying machine. After that, all historical data of final quality forecasts are stored."

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Metris FOX follows all the main process variables – there are 17 of them altogether that affect yield and quality parameters, for instance, alkali dosage during the cooking process, temperature in the O₂-stage or peroxide dosage in the bleach plant. "It was a big challenge to equalize all the 17 parameters," says Harri Qvintus – Senior Vice President Sales, ANDRITZ.

ANDRITZ will offer a specially designed window for operator use, where the user can follow the forecast of the final quality and value of each parameter. Kapanen says, "The operator can see in each different process stage what the final quality forecast is and identify the process parameters that might be out of the setpoint or operating range. Adjustments can then be made to improve final quality."

THE FINAL PROOF

Metris FOX is currently being run at two pulp mills in Finland, including Metsä Fibre's Äänekoski bioproduct mill. Nousiainen says, "The results come in improved product quality. The quality of the final pulp can be followed in the fiberline and can be controlled to enable maximum quality output. Another feature is the ability to provide the customer with full quality information so they can fine tune their processes to enable maximum efficiency."

Qvintus concludes, "The FOX index is also beneficial for integrated mills. When properties of incoming pulp are known, no refining tests are needed. It has been proved that the FOX index is beneficial for all types of paper machines: fine paper, LWC, board, and tissue. One final customer has declared that after seeing the FOX index, she knows exactly how to adjust her paper machine to operate it in the most economical and optimized production."

