

Valmet IQ Fiber.

Today, Valmet's infrared technology can measure oven-dry basis weight (fiber weight) with the same degree of precision, while simultaneously measuring moisture. By combining both measurements in one sensor, Valmet IQ Fiber considerably reduces the lifecycle costs of servicing and spare parts and eliminates the need for nuclear safety training and handling procedures. The accurate scan averages and high-resolution CD profiles measured by IQ Fiber today provide a solid foundation for machine- and cross-direction oven-dry weight controls on over 140 tissue machines, using virgin pulp up to 100% recycled furnish.



Dusan Planeta, Production Manager, Metsä Tissue Žilina.



Stefan Matak, Automation System Engineer, Metsä Tissue Žilina.

### Upgrades on TM 1

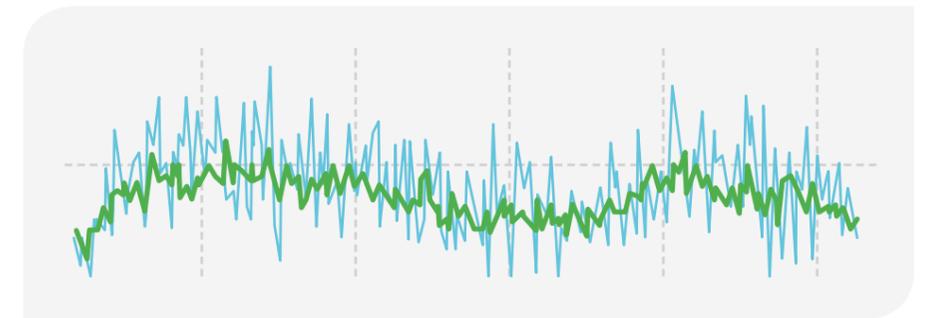
The QCS on Žilina's TM 1 was upgraded in 2013, as the old basis weight and moisture sensors were nearing obsolescence and the results were gradually deteriorating as the basis weight nuclear source approached the end of its life. In addition to replacing part of the control hardware, the TM 1 scanner was upgraded to allow the installation of the IQ Fiber measurement system.

As with any new technology like IQ Fiber, comparisons with earlier methods are of great interest. According to **Stefan Matak**, Automation System Engineer at Žilina, the new measurement is more stable than the old nuclear sensor and moisture measurement. "The repeatability is better than before, and the sensitivity to head geometry and dirt is less critical," he says. "As in all tissue mills, we have a lot of fiber particles in the air, but cleaning once per day is the only maintenance we've needed in over a year of operation."

### Attention to PM2

With good results from TM 1, which produces white tissue grades, the mill's attention turned to TM 2 and colored tissue. Samples were sent to Valmet's Tampere R&D facility to evaluate the effect of color and ash content on the measurement. The Žilina mill produces tissue from either 100% virgin fiber with about 0.5% ash, or from totally recycled furnish with an ash content of up to 3%, depending on tissue grade.

As Valmet's Marko Toskala expected, the results confirmed that IQ Fiber would work well on TM 2 despite the different colored tissue grades and varying ash content. "Different colors are handled well by the measurement principle, only very dark



An example of single-scan unfiltered basis weight profiles. IQ Fiber is in green compared to the noisier nuclear sensor in blue.

black needs to be tested with paper samples beforehand," he concludes.

### Good results on colored grades

The TM 2 upgrade took place in June 2014, and according to Stefan Matak, the results have been good with no problems: "The new sensor is a very good replacement for the old nuclear sensor. It gives the same or even better measurement quality for both basis weight and moisture."

For **Dusan Planeta**, Production Manager, the change to IQ Fiber has been painless, with the results on colored tissue as good as white. "We have had very good results with the new measurements. One very big advantage is that there is no need for a radioactive source anymore. The new sensors are easier to maintain and all the annual nuclear safety procedures and costs can be dispensed with now." ■

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# Metsä Tissue says GOODBYE to nuclear sensors thanks to Valmet IQ

The recent upgrade of the quality control system on tissue machine 1 at Metsä Tissue's Žilina mill in Slovakia was successful. The good results have led to the installation of a second Valmet IQ Fiber measurement system on the mill's tissue machine 2, producing colored tissue. **TEXT** Nigel Farrand

**N**uclear basis weight sensors using radioactive sources have for many years been the standard for scanning the tissue web. They are capable of very precise, repeatable readings, but over time, noise in the measurement signal requires additional filtering as the radioactive source decays. To provide an oven-dry basis weight reading for control purposes, infrared moisture sensors are normally positioned alongside the nuclear sensor.

## Metsä Tissue in a nutshell

Metsä Tissue is part of Metsä Group. The Žilina mill is one of the company's European tissue sites. With its high-quality tissue and cooking papers, Metsä Tissue is a leading supplier of tissue paper products to households and industrial consumers in Europe, and also the world's leading supplier of baking and cooking papers. With production units in six countries, Metsä Tissue employs a total of about 2,800 people.