TWO TOP NEW CONCEPTS FOR TISSUE PRODUCTION

In just two years ANDRITZ has launched two completely new machine concepts for tissue producers to provide the very best in technology available for making specialty products with maximum efficiencies. The two concepts, the *Prime*LineTEX and the *Prime*LineVRT, are now available on the market and can be tested at the ANDRITZ tissue pilot plant in Graz.

*Prime*LineTEX

The *Prime*LineTEX tissue machine has been designed with the high-quality, specialist tissue maker firmly in mind. The existing production technologies for these high caliper and high absorbency products, like Through-Air-Drying (TAD), are generally expensive in terms of capital cost, and at the same time they have been notoriously demanding when it comes to energy use. The *Prime*LineTEX has been designed for the production of textured tissue to fully address both of these important issues: energy-consumption comparable to the production of dry-crepe tissue, and quality close to premium TAD tissue.

The design of the tissue machine is derived from the clever idea to structure the tissue paper with a rush transfer operating directly on the belt of the shoe press. A conventional CrescentFormer is used to form the paper on the felt and then enter to the specially designed *Prime*Press X shoe press. The paper is then pressed with a line load up to 500 kN/m, increasing the dryness of the paper by up to 45%. The paper web remains attached to the plain belt of the shoe press and is then rush transferred onto a structured fabric, similar to the ones used in the TAD process.

The structured fabric runs at a slower speed compared to the shoe press, resulting in the wet creping, and the fiber mat is pushed into the 3D pattern of the structured fabric to generate structured tissue. The paper sheet is then transferred from the fabric to the *Prime*Dry Steel Yankee surface with the help of adhesion chemicals and is dried off by the Yankee and the *Prime*Dry Hood. The paper, removed from the Yankee surface by a creping blade, is calendered to maximize the 'quality feel' of the tissue surface and is finally sent to the reeling section at the end of the machine.

Stefano Marenco, ANDRITZ Director, *Prime*LineTIAC and R&D, says, "*Prime*LineTEX is a completely new technology for specialist tissue making, and is a direct alternative for making high-quality tissue without using the high-energy TAD process. The new tissue machine particularly excels in the making of paper towel products where the rough pattern of the structured fabric can provide good caliper and absorbency. Also, with a suitable fabric pattern and use of the calender, the concept is perfect for making high-quality bathroom tissue with high softness."

*Prime*LineTEX is available to fulfil all standard market widths, from 2.7 to 5.6 m. The machine speed depends on the product and basis weight, but it can be operated up to 1,500 m/min Yankee speed. The quality of the paper produced is close to TAD, but requires 50-60% less energy.

*Prime*LineVRT

The *Prime*LineVRT machine has been designed specifically to address the energy consumption of dry-crepe technology. Some 95% of global tissue production volume is produced using dry-crepe technology. The VRT

Test the two new tissue machine concepts at the ANDRITZ pilot plant!

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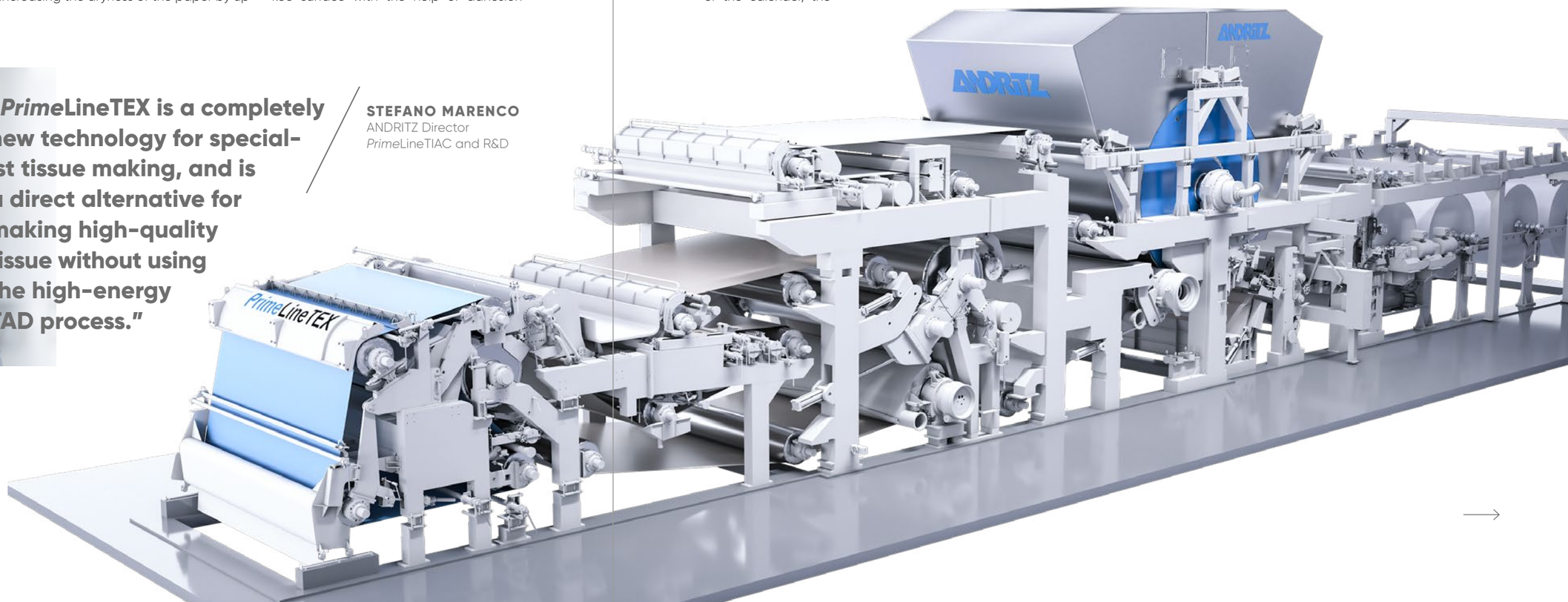

in *Prime*LineVRT stands for Vertical CrescentFormer, which has been a project focused on further reducing the energy consumption.

The main concept of the Vertical CrescentFormer is to increase the dryness of the fiber web coming out of the crescent former. The idea consists of the drying out of the embedded water from the forming fabric once it leaves the paper, and then bringing the fabric back into contact with the paper sheet using a suction roll installed on the felt side. The tension of the forming fabric squeezing the paper and removes further water from the paper.

The VRT can also be supplied with an additional press roll, which presses the paper before leaving the nip between the felt and the forming fabric and a hot air hood to increase the water temperature, reducing the water viscosity that facilitates the dewatering of the sheet. One key advantage of the VRT concept is that it can also be installed as a module on existing dry-crepe machines.

Carlos Gallo, ANDRITZ Director of Technology and Start-up, Tissue Machines, says, "Since the beginning with the first trials at our tissue pilot plant, we could see the huge potential of this technology for energy savings. We tried many different ideas and configurations to remove additional water from the paper web in the forming section, and the VRT concept proved to be the best. Additional trials focusing on paper quality have revealed that the VRT concept also increases caliper and tensile strength."

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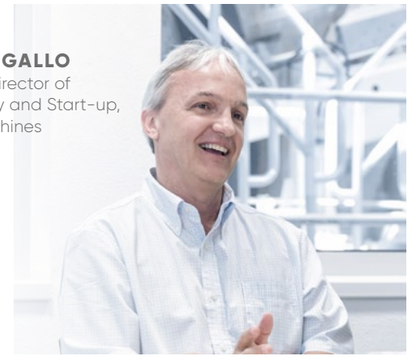

*Prime*LineVRT is available in all standard market widths, from 2.7 to 5.6 m. The machine speeds are the same when compared to dry-crepe machines and VRT is available as a module to be retrofitted to a dry-crepe machine. The expected energy savings are in the range of 8-12% when compared to a dry-crepe machine. Depending on the product and paper quality, there is an expected gain in bulk of about 5-10% compared to dry-crepe.

TISSUE TRIALS

Both new tissue machine concepts, *Prime*LineTEX and *Prime*LineVRT, were extensively tested at the ANDRITZ tissue pilot plant in Graz, Austria. Franz Harrer, ANDRITZ Head of Technology, Tissue explains, "As well as being able to visit our tissue pilot plant in person to view their own trials on our latest technology such as the *Prime*LineTEX and *Prime*LineVRT, we also have the latest in remote visual technology where we can conduct customer trials live and online. Operators using HoloLens visual technology along with support from the Metris Performance Center of ANDRITZ can give the impression that the customer is actually there, on site, viewing and experiencing the trials. All our customers who have taken part in this online service so far have been very impressed with the performance and quality of the experience."

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